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The Association does not accept the responsibility for the opinions of contributors. Offensive personalities must be avoided.

"ON TO NASHVILLE."

NASHVILLE is the "City of Opportunity," it is the "Rock City" of the "Volunteer State." It is the "Athens of the South," and the Capital of the great State of Tennessee, and it is for one week, August 18-23, to be the home of that great, "homeless" body of pharmaceutical scientists, the A. Ph. A.

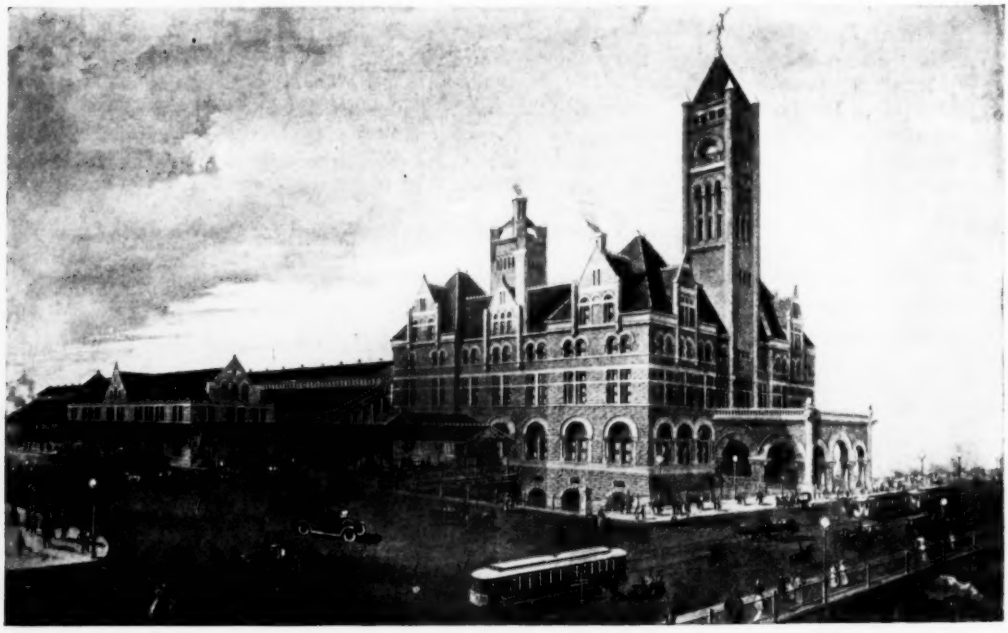
It is our desire to tell you, as best we can, how she came by all these synonyms.

In the first place a hunter by the name of Gasper Mansker and two companions had the "opportunity" of passing through this "Garden of Eden," and finding the scenery so beautiful, game so plentiful and the soil so rich and productive, they spread its praises in every settlement they passed through, and in their wanderings back East, towards civilization, stopped at Watauga settlement, in what is now East Tennessee, near Knoxville, where they passed some little time. Here they made the acquaintance of Captain James Robertson, who, becoming interested in the story, decided, with a few of his fellow-settlers, to investigate. Accordingly, in February, 1779, they started for Big Salt Lick, near Cedar Bluff, on Cumberland river, formerly known as Shawnee river, which had been so glowingly described by Mansker.

After a month's travel, during which time they walked about 500 miles, they arrived at the end of their journey, Sulfur Dell, our baseball park. In Sulfur bottom, between the spring and the river, they cleared away the cane brake and planted the first field of corn, this being required by law to establish their title to the land they had come to settle on. In May, 1780, these settlers met to adopt rules to govern the colony, and the settlement on the Bluff was called Nashboro,

in honor of General Francis Nash, who was killed at the battle of Germantown about three years before. This name it retained until April, 1784, when an act of the N. C. Legislature changed the name to Nashville. Tennessee was admitted into the Union in 1796, and at that time was divided into three districts and eleven counties. The Nashville district was called Mero, in honor of Governor Mero of New Orleans, and was composed of three counties, Davidson, Sumner and Tennessee. The city was incorporated in 1806. The Legislature first met here in 1812-1815 and again in 1826 to 1843, when it was made the permanent capital.

Nashville is an ideal Convention City. Look at it on the map. You will see that it can be reached in a 12-hour ride by one-third of the people of the United States. Its hotel accommodations are adequate and up to date. Its transporta-



UNION STATION, NASHVILLE.

tion facilities are the simplest, cheapest and best in the whole country. You can board a car at any point in the city and go to any other point for one fare, five cents. All car lines in the city and all interurban lines pass through one central station, located on the original Square of four acres, which was set apart in the original plan of the city for public buildings, and on which now stands the County Courthouse, the City Hall and the Market House. This central station is built on the spot formerly occupied by the home of Captain James Robertson.

Nashville is well supplied with assembly hall facilities, which range in seating capacity from 8500 down, and the rooms are well lighted, well ventilated and the acoustics good. Some large organizations have been her guests in recent years, among which have been the Southern Baptists' Convention, the National Organization of T. P. A., the United Confederate Veterans, the International

Society of Christian Endeavor, and has twice entertained the American Medical Association, once in 1857 and again in 1890, at which meeting there were present about 1200 physicians, and others directly and indirectly connected with the Association. The first physician who opened shop in Nashville was Dr. John Sappington, the originator of Sappington pills. He located there in 1785 and did a thriving business until the mystery of his pills was found out, when he lost his practice and standing.

Nashville has always been famous for two things, churches and schools, to which is due her title, the Athens of the South. In an abridged copy of the "American Universal Geography," published March, 1806, I find this entry under the head of principal towns in Tennessee: "Nashville N-lat 36°. The courts for the district of Mero are semi-annually held here. It has two houses for public worship, and a handsomely endowed academy, established in 1786."

As an evidence of her great importance as an educational center, it is only necessary to state that the Trustees of the Geo. Peabody Fund have recently

PARTHENON AND THOMAS MONUMENT, NASHVILLE.

given a million and a half dollars to found a college for Southern teachers to be located here, and the buildings for the same are now being constructed. Andrew Carnegie, during the month of May, gave one million dollars to Vanderbilt University, and the city has many other educational institutions for both white and black, male and female.

A High School building has just been completed at a cost of $350,000, and Y. M. C. A. and Y. W. C. A. buildings have just been completed, costing $200,000 and $100,000, respectively, the funds for each of which were raised by public subscription in thirty days' time. The view from the top of the Y. M. C. A. building is magnificent, and will repay every visitor who will take the time to go up there and "view the landscape o'er."

As a manufacturing center, Nashville possesses great advantages, and her enterprises are many and varied. Her jobbing and manufacturing business amounts to $210,575,000 a year. Cheap fuel, almost without limit, lies right at her doors. There is just now being completed the Hydro-Electric plant of Ocoee, with an estimated horsepower of 160,000, which will furnish her factories with power for every purpose required.

Nashville is one of the greatest hardwood markets in the country, her lumber

interests amounting to $11,000,000 annually. She furnishes the red cedar for making the famous "Faber pencils." She makes 204,000 stoves annually, which are shipped from the Atlantic to the Pacific. Nashville retail trade amounts to $35,000,000 a year. The display windows in her retail districts are the wonder and admiration of all strangers who come to the city. A year or two since a noted actor, in passing through the city to fill an engagement at Louisville, Ky., wandered off uptown and became so enchanted with the pretty show windows that he forgot all about his train, and when he came to himself, his train was gone and he had to secure a special to put him in Louisville in time to meet his engagement. In a contest offered by a New York firm, a few years since, for the best looking woman in the United States, the prize was awarded to a Nash-

STATE CAPITOL, NASHVILLE.

ville girl. The first gun fired in the Spanish-American war was fired from the gunboat Nashville, and you may see this same gun when you come to the American Pharmaceutical Association meeting, in the City Hall on the Public Square.

Nashville's parks and playgrounds are adequate and beautiful. The largest of these is Centennial park, near Vanderbilt University, which contains the only exact reproduction of the Parthenon in the world, in the shadows of which was recently enacted the great Greek pageant, mentioned so often recently in the newspapers and magazines. The entire production was a Nashville creation and the play was put on by Nashville talent.

A Nashville protographer enjoys the distinction of having captured first prize

in two national contests. In the council halls of the nation Nashville has furnished some noted men, among whom may be mentioned two Presidents, Jackson and Polk, leaders of distinction before the Civil War, and in recent years two justices of the Supreme Court, Howell E. Jackson and H. H. Lurton; two cabinet officers, J. M. Dickinson, President Taft's secretary of war, and J. C. McReynolds, the present attorney general.

And now to prove that all this praise of Nashville is not "home grown," I must before closing quote what Dr. Winchell, in his "Sketches of Creation," has to say regarding Nashville and her surroundings. He says: "I ascend the cupola of the magnificent State House at Nashville and take a survey of the surrounding country. On every side spread out the broadly undulating fields of grass and corn into the illimitable distance. A finer agricultural scene was never witnessed. A more beautiful landscape—diversified with broad clearings, waving crops, tufts of magnolia and poplar, shining mansions, withdrawing vales and purple atmosphere—it has never been my privilege to gaze upon."

Now, in conclusion, Nashville makes her best bow to the American Pharmaceutical Association and extends a pressing invitation to every member to come on August 18-23 to the Land of the Magnolia and Mocking Bird, where the watermelon is smiling and good fellowship waits, and receive a true and hearty Southern welcome, and, don't forget, "You'll never be happy 'till you see Nashville."

JAMES O. BURGE.

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NASHVILLE HOTEL RATES.

MAXWELL HOUSE.

European Plan.....80 Rooms.
$1.00 and $1.50.....Without Bath.
$2.00 and $3.00.....With Bath.

SAVOY.

European Plan.....80 Rooms
$1.00 and $1.50.....Without Bath.
$2.00 and $2.50.....With Bath.

BISMARCK.

European Plan—Gentlemen only.....54 Rooms.
$1.00 Without Bath.....$1.50 With Bath.

HOTEL TULANE.

American Plan.....200 Rooms
$2.00 and $3.00.....Without Bath.
$3.50 and $4.00.....With Bath.

DUNCAN HOTEL.

American Plan.....125 Rooms.
$3.00 and $4.00.....Running Water in Every Room.

HOTEL HERMITAGE, OFFICIAL A. PH. A. HEADQUARTERS.

OFFICIAL HEADQUARTERS: HOTEL HERMITAGE.

European plan.

250 Rooms and Bath	$2.00, $2.50, and $3.00 per Day.
$2.00 rooms, 2 persons	$ 4.00
$2.50 rooms, 2 persons	4.50
$3.00 rooms, 2 persons	5.00
Parlor bedrooms	8.00
Parlor bedrooms, 2 persons	10.00

WOOD ALCOHOL BLINDNESS.

IN a recent number of the *Journal of the A. M. A.*,* Dr. Hiram Woods, of Baltimore, gives an account of two recent cases of blindness following the use of wood alcohol, one from its external application and the other from taking it internally.

In the first case the disastrous results followed the application of wood alcohol to the muscles of the legs and hips of a person suffering from supposed rheumatism. In the second case blindness followed the drinking of whiskey which contained 30 per cent of wood alcohol.

The paper also refers to a large number of other cases of death or of total or partial blindness following the use of wood spirit.

An interesting and singular feature of the subject is the variation in susceptibility of different individuals, some being injuriously affected by as small a quantity as a teaspoonful, while others can apparently consume large quantities without serious consequences.

The exact way in which wood alcohol acts upon the central nervous system is not well understood. It is known, however, that it is less easily eliminated than ethyl alcohol, and it is believed to be oxidized in the system to formaldehyde. The specific cause of blindness is atrophy of the optic nerve, and probable destruction of the ganglion of the retinal cells.

The poisonous qualities of wood alcohol have been so frequently mentioned during recent years that it would seem impossible that any retail druggist could be unacquainted with them, and a failure on his part to attach a poison label to the substance and a caution against its medicinal use would probably make him legally responsible for damages resulting from its administration.

While it is believed that pharmacists generally observe due caution in the dispensing of wood alcohol, it is a well known fact that many of the toilet waters supplied by barbers' supply houses, and the cheaper brands of flavoring extracts sold to country store-keepers still contain this pernicous article.

Dr. Woods' paper presents the following important conclusions and recommendations:

Methyl, or wood alcohol, in any of its forms, and all methylated preparations as well, are dangerous poisons, menacing both life and sight.

It is used as an adulterant of and substitute for, grain alcohol in cheap whisky and other alcoholic beverages, not to mention Jamaica ginger, lemon extract and many other essences and flavoring fluids.

Methyl alcohol is largely used in the preparation of many proprietary and patent medicines, (?) witch hazel, domestic liniments, as well as bay rum, cologne water, Florida water and other perfumes.

The symptoms of acute poisoning are gastro-intestinal disturbances, more or less severe, accompanied by abdominal pain, general weakness, nausea, vomiting, vertigo, headache, dilated pupils and blindness. If recovery does not occur, there is marked depression of the heart's action, sighing respiration, cold sweats, delirium, unconsciousness, coma and death.

The diagnosis can hardly be mistaken. Methyl alcohol poisoning presents a picture unlike that of any other intoxication. Acute abdominal distress, followed by blindness, should always awake suspicion of methyl alcohol poisoning.

The prevention of poisoning by this insidious drug can only be brought about by prohibiting (or rendering unprofitable) the sale of deodorized wood alcohol in all its forms. The number of deaths may, meantime, be limited by putting all methylated preparations on the

*Vol. LX, p. 1762.

list of poisons and prosecuting all persons adulterating foods and drinks with it. Labeling it with the notice, "This fluid, taken internally, is likely to produce blindness," will certainly have a deterrent effect.

Poisoning by inhalation of the fumes of methyl alcohol generally occurs when the exhalations are mixed with rebreathed air, as in varnishing the interior of beer-vats, closets or small rooms, etc. It is also highly probable that in susceptible subjects repeated or even single methylated "alcohol rubs" may produce poisoning symptoms, through absorption of the spirit by the skin.

With reference to the charge that many proprietary and patent medicines contain wood alcohol, it is only fair to state that the editor has examined the reputed formulas of many such preparations, and has found only one which is stated to contain that substance, this being a veterinary preparation recommended for external use.

J. H. BEAL.

THE FEDERAL ANTI-NARCOTIC SITUATION.

READERS of the *Journal* will have noticed reports of the formation of the National Drug Trade Conference, called in pursuance of a resolution adopted at the Denver meeting, and the minutes of the several meetings of the Conference and of its Executive Committee. The present issue contains a report of the latest meeting of the Executive Committee and a copy of the bill as finally agreed upon by the Committee and Dr. Hamilton Wright, United States Opium Commissioner, who has been largely responsible for the movement in favor of the proposed legislation.

The draft of the bill now in the hands of Dr. Wright will probably be introduced into Congress during the present month and, if legislative conditions are favorable, is likely to become a law without much further modification. Although strikingly different from the Harrison Bill as originally introduced, the present bill is a lineal descendant from the former. The first Harrison bill contained what seemed to the representatives of the drug trade to be many dangerous uncertainties of statement, and at the successive meetings of the Conference was revised in such a way as to make some of the uncertainties certain, and some of the obscure provisions less obscure.

While the bill as thus reframed at the first two meetings of the Conference was far from meeting the wishes of the drug trade representatives, it at least served the purpose of calling attention to the defects of the original draft and had the effect of converting those in favor of Federal supervision of narcotics to the much simpler draft which is now proposed.

Neglecting minor details, the principal provisions of the draft as it now stands are as follows:

Section 1 drops the original cumbersome classification into producers, importers, exporters, wholesale manufacturers, wholesale dealers, and retailers, and embraces all of these under a single class, and requires every one who produces, imports, exports, manufactures, compounds, deals in, dispenses, sells, distributes or gives away any opium or coca leaves, or any compound, manufacture, salt, derivative or preparation thereof, to register with the Collector of Internal Revenue of his district and pay an annual tax of $1.00. The original bill proposed to

levy a tax of $100.00 on wholesale manufacturers, dealers, etc., and of $25.00 upon retailers.

Section 2 provides that the aforesaid drugs cannot be delivered, except in pursuance of an order written upon an official order blank supplied by the Collector of Internal Revenue. The purchaser is required to retain a copy of his order for two years, subject to inspection by the proper officials, and the seller likewise must preserve his copy of the order for the same length of time. These order blanks can be obtained only from the Collector of Internal Revenue, and can be supplied only to persons registered under the Act. It is made unlawful for any other person than the one to whom the order blanks are furnished to use them for the obtaining of the drugs, or for the holder of the blank to obtain the drugs for any other purpose than for use in the regular course of business or professional practice.

This order blank is proposed as a substitute for the elaborate system of special tax stamps, records and detailed reports of purchases and sales provided for in the original bill.

The use of the order blank is unnecessary in the following cases:

(a) For the dispensing of the drugs to a patient by a pyhsician, dentist, or veterinarian registered under the Act, in the course of his professional practice only, when he is in personal attendance upon the patient to whom it is dispensed.

(b) To the dispensing of the drugs by a pharmacist in pursuance of a written, signed, and dated prescription, issued by a physician, dentist, or veterinarian registered under the Act, the pharmacist being required to preserve such prescription for a period of two years.

(c) For the shipment of any of the drugs to a person in any foreign country. The order blanks are to be supplied to registered dealers at approximate cost.

Section 3 provides that the Collector of a district may require of any registered person a statement of the quantity of the drugs purchased and from whom received during the three months immediately preceding the time when the request for such statement is made.

Section 4 makes it unlawful for any person to send, ship, carry, or deliver the named drugs and their preparations, etc., in interstate commerce, but exempts from this provision common carriers, the employes of registered persons, and the delivery of the drugs in pursuance of written prescriptions of physicians, dentists, and veterinarians, who are registered under the Act, to patients who are under the immediate personal care of such physicians, dentists, and veterinarians.

Section 5 provides that the duplicate order forms and prescriptions required to be preserved shall be open to the inspection of duly authorized agents and officers of the Treasury Department, or of any state, territory, or municipality, or the District of Columbia, who are charged with the enforcement of any law or ordinance prohibiting or regulating the prescribing, dispensing, etc., of the aforesaid drugs. The Collector is also authorized to furnish, at a moderate price, to duly authorized officials copies of statements and reports filed in his office, and to furnish to any person a list of the registered dealers in his district.

Section 6 exempts from the provisions of the Act preparations which do not contain more than 2 grains of opium, or 1-4th grain of morphine, or 1-12th of a grain of heroin, or 1 grain of codeine, or their salts or derivatives, in a fluid or

avoirdupois ounce; also, liniments and ointments and other preparations, prepared for external use only, which do not contain more than the above mentioned quantities, provided all of the excepted preparations are dispensed as medicines and not for the purpose of evading the provisions of the Act.

This section also exempts preparations of coca leaves which do not contain cocaine.

Section 7 is simply a declaration that certain laws relating to the collection, etc., of internal revenue taxes, so far as applicable, shall apply to the provisions of this Act.

Section 8 makes it unlawful for any person who has not registered and paid the special tax to have in his possession or control any of the aforesaid drugs, but exempts possession by an employe of a registered person, having control by virtue of his employment, or possession by a person when the drugs have been prescribed in good faith by a physician, dentist, or veterinarian registered under the Act, or possession by warehousemen holding them for a person registered, or common carriers, or possession by Federal, state or municipal officers having possession for the purpose of enforcing the provisions of any law.

Possession by an unregistered person, except as above named, is presumptive evidence of violation, and the burden of proof is placed upon the defendant to show that his possession is lawful.

Section 9 provides a penalty for violation of the requirements of the Act consisting of a fine of not more than $2,000, or imprisonment for not more than five years, or both, at the discretion of the court.

Section 10 authorizes the Commissioner of Internal Revenue to appoint agents, deputy collectors, inspectors, chemists, etc., for the enforcement of the Act.

Section 11 makes an appropriation of $150,000 for the enforcement of the law.

Section 12 provides that the Act shall not be construed to impair, alter, amend or repeal any of the provisions of the Food and Drugs Act of 1906, or of the act which prohibits the importation and use of opium for other than medicinal purposes.

From a review of the proposed law it will be seen that it does not place any restriction upon the class of persons who may register as dealers in the named narcotic drugs, except in so far as such restrictions are found in the provisions relating to the use of the official order blank, and prohibiting the use of the order blank for the purpose of obtaining them for any other than a lawful purpose, and this for the very good reason that the Federal Government has no power under the taxing clause of the Constitution to do otherwise. A long line of well considered decisions establishes the fact that, while the Federal Government may levy a tax upon any property or occupation, even to the extent of total prohibition, the tax must be uniform, and must be accepted from every one who makes a proper tender thereof. This is apparently the limit of Federal authority under the taxing power.

As a consequence, it follows that any effective limitation upon the sale and distribution of the drugs when made wholly within state territory must be imposed by the states themselves. All that Federal authority can do is to provide the means whereby, through registration, etc., the quantity and character of the

drugs can be traced to the last distributor, and to make the information available to state, territorial and municipal officers.

If the states fail to adopt proper statute regulations, or if their officials fail to properly enforce the local laws, then the Federal enactment will have but little effect in controlling the improper use of the named narcotic drugs.

The benefit of the Federal enactment will, therefore, lie mainly in the requirement that all dealers be registered and make returns when required, and the use of the official order blank, by which means the drugs can be traced from the time of their introduction into the country until they reach the hands of the registered dealer who disposes of them to the consumer.

It is even a question whether some of the provisions respecting the use of the order blank and sales on prescriptions do not infringe upon the state's exclusive police powers, but since the principal law officers of the government are inclined to defend the constitutional soundness of these provisions, the skirts of the drug trade will at least be clear if the courts do not up-hold the legislation.

While it would be unwise to say that every provision of the draft is entirely satisfactory, it is only just to the framers of the bill to add that no provision was inserted without careful consideration and without viewing it from many angles, and it is to be hoped that those who are inclined to find fault with any of the separate details of the bill will suggest provisions which will be equally effective and less objectionable than the ones to which they object.

The Editor will be glad to give space to criticism and suggestions which any members may desire to offer. J. H. BEAL.

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HARRISON BILL PASSES THE HOUSE.

SINCE the preceding remarks were placed in type the news comes from Washington that the Conference Bill, introduced by Hon. Burton Harrison, of New York, as H. R. 6282, has passed the House, with some very minor changes in phraseology which the lawyers of the House thought necessary to make certain of its provisions perfectly plain. None of these amendments affect the general purport of the bill, and there is no apparent reason why the drug trade should not be perfectly satisfied with them.

The passage of the measure through the Senate is likely to be a slower and more difficult operation, though if the President should exert his influence in its favor, which it is expected he will do, the bill will likely become a law before the end of the special session. J. H. BEAL.

Section on Scientific Papers

Papers Presented at the Sixtieth Annual Convention

VARIATION IN THE SUSCEPTIBILITY OF FROGS TO OUABAIN.

CHAS. E. VANDERKLEED, PHAR. D., AND PAUL S. PITTENGER, PHAR. D.

During the course of the experiments on variation in susceptibility of guinea pigs to ouabain, the results of which are presented in another paper (see JOURNAL for May, p. 558), a series of tests were run simultaneously on frogs. The method used was the "one hour" method. In the following tables the doses given are in grams per gram body weight:

AUGUST, 1911.

Male Leopard Frogs (Rana pipiens) from Illinois.

Weights ranged from 38.5 to 57.5 grams.
Temperature of water in frog tank, 26.5° to 29.5° C.
Temperature of room, 25.5° to 28.5° C.

Dose	Weight		Results
0.00000030	42.0	—	Beats.
0.00000031	40.0	—	Occasional beat.
x0.00000032	45.5	+	Stopped. Extra contraction on stimulation.
0.00000032	55.0	+	Stopped. Extra contraction on stimulation.
0.00000032	56.5	+	Stopped. Extra contraction on stimulation.
0.00000032	57.5	+	Stopped. Extra contraction on stimulation.
0.00000033	42.5	—	Non-absorption.
0.00000034	38.4	+	Stopped. No extra contraction on stimulation.*
0.00000034	44.0	+	Stopped. No extra contraction on stimulation.
0.00000036	45.0	+	Stopped. No extra contraction on stimulation.
0.00000039	40.0	+	Stopped. No extra contraction on stimulation.

M. L. D. considered to be 0.00000032.

Female Leopard Frogs (Rana pipiens) from Illinois.

Weights ranged from 30 to 62.3 grams.
Temperature of water in frog tank, 26.5° to 29.5° C.
Temperature of room, 25.5° to 28.5° C.

Dose	Weight		Results
0.00000036	40.0	—	Beats.
0.00000036	34.0	+	Stopped.
0.00000037	34.0	—	Slight beat in auricle.*
0.00000037	43.5	—	Slight beat in auricle.
0.00000037	36.0	—	Beats.
0.00000038	37.5	—	Beats.
0.00000038	34.0	—	Beats.
x0.00000038	30.0	+	Stopped. Extra contraction on stimulation.
0.00000038	37.5	+	Stopped. Extra contraction on stimulation.
0.00000038	62.3	+	Stopped. No extra contraction on stimulation.
0.00000039	50.5	—	Beats.*
0.00000039	66.6	—	Auricles still contracting.*
0.00000039	46.0	+	Stopped. No extra contraction on stimulation.
0.00000039	37.0	+	Stopped. No extra contraction on stimulation.
0.00000039	48.0	+	Stopped. No extra contraction on stimulation.
0.00000040	40.0	+	Stopped. No extra contraction on stimulation.

M. L. D. considered to be 0.00000038.

*"Out of order."

Female Bull-frogs (Rana catesbiana) from Pennsylvania.

Weights ranged from 38.5 to 54 grams.
Temperature of water in frog tank, 24.5° to 26.5° C.
Temperature of room, 24° to 25.5° C.

Dose	Weight		Results
0.00000036	48.2	—	Beats.
0.00000040	41.0	—	Beats.
0.00000045	41.0	—	Beats.
0.00000047	43.0	—	Beats.
0.00000050	42.0	—	Auricles still contracting.
0.00000051	38.5	—	Auricles still contracting.
x0.00000052	39.6	+	Stopped. Extra contraction on stimulation.
0.00000052	40.0	+	Stopped. Extra contraction on stimulation.
0.00000052	40.5	+	Stopped. Extra contraction on stimulation.
0.00000052	38.5	+	Stopped. Extra contraction on stimulation.
0.00000052	48.5	+	Stopped. Extra contraction on stimulation.
0.00000053	40.5	—	Non-absorption.*
0.00000053	48.0	+	Stopped. No extra contraction on stimulation.
0.00000053	54.0	+	Stopped. No extra contraction on stimulation.

M. L. D. considered to be 0.00000052.

SEPTEMBER, 1911.

Male Leopard Frogs (Rana pipiens) from Illinois.

Weights ranged from 20.1 to 61.1 grams.
Temperature of room, 23.5° to 25.5° C.
Temperature of water in frog tank, 21° to 23° C.

Dose	Weight		Results
0.00000030	29.1	—	Beats.
0.00000032	59.2	—	Beats.
0.00000036	61.1	+	Contracts on stimulation.
0.00000036	33.6	—	Beats.
0.00000036	35.2	—	Beats.
x0.00000038	30.3	+	Contracts on stimulation.
0.00000038	20.1	+	Contracts on stimulation.
0.00000040	33.3	+	No contraction on stimulation.
0.00000042	34.2	+	No contraction on stimulation.
0.00000044	38.6	+	No contraction on stimulation.

M. L. D. considered to be 0.00000038.

Female Leopard Frogs (Rana pipiens) from Illinois.

Weights ranged from 61.5 to 88.7 grams.
Temperature of room, 23° to 25.5° C.
Temperature of water in tank, 21° to 23° C.

Dose	Weight		Results
0.00000025	88.7	—	Beats.
0.00000028	83.	—	Beats.
0.00000030	70.9	—	Occasional beat.
x0.00000030	61.5	+	Contracts on stimulation.
0.00000030	78.0	+	Contracts on stimulation.
0.00000032	73.2	+	No contraction on stimulation.
0.00000032	61.6	+	Contracts on stimulation.
0.00000034	82.7	+	No contraction on stimulation.

M. L. D. considered to be 0.00000030.

*"Out of order."

OCTOBER, 1911.

Male Leopard Frogs (Rana pipiens) from Illinois.

Weights range from 24.7 to 29.3 grams.
Temperature of room, 24.5 to 25° C.
Temperature of water in tank, 18 to 19.5° C.

Dose	Weight		Results
0.00000038	27.2	—	Beats.
0.00000040	29.0	+	Contracts on stimulation.*
0.00000040	27.2	—	Beats.
0.00000044	26.0	—	Beats.
0.00000050	29.3	—	Beats.
0.00000053	26.5	—	Beats.
0.00000055	24.7	—	Occasional beat.
x0.00000055	25.7	+	Contracts on stimulation.
0.00000055	28.3	+	Contracts on stimulation.
0.00000057	25.2	+	No contraction on stimulation.
0.00000057	25.7	+	No contraction on stimulation.

M. L. D. considered to be 0.00000055.

Female Leopard Frogs (Rana pipiens) from Illinois.

Weights ranged from 18.1 to 37.1 grams.
Temperature of room, 23.5 to 25.5° C.
Temperature of water in tank, 18° to 19.5° C.

Dose	Weight		Results
0.00000032	31.5	+	Contracts on stimulation.*
0.00000036	28.5	+	Contracts on stimulation.*
0.00000036	28.2	—	Beats.
0.00000038	27.2	—	Beats.
0.00000046	31.2	—	Occasional beat.
0.00000046	22.2	—	Beats.
0.00000048	20.0	—	Beats.
0.00000050	37.1	—	Beats.
0.00000053	26.8	—	Occasional beat.
x0.00000055	25.0	+	Contracts on stimulation.
0.00000055	18.1	+	Contracts on stimulation.
0.00000057	26.0	+	No contraction on stimulation.

M. L. D. considered to be 0.00000055.

NOVEMBER, 1911.

Male Leopard Frogs (Rana pipiens) from Illinois.

Weights ranged from 14.6 to 36.5 grams.
Temperature of room, 11.5° to 24° C.
Temperature of water in tank, 13° to 15° C.

Dose	Weight		Results
0.00000038	28.5	—	Beats.
0.00000044	36.4	—	Beats.
0.00000055	28.2	—	Beats.
0.00000060	30.2	—	Beats.
0.00000064	31.5	—	Beats.
0.00000200	29.0	—	Beats.
0.00000250	34.0	—	Occasional beat.
0.00000250	30.2	—	Beats.
0.00000270	27.4	—	Occasional beat.
0.00000300	29.0	—	Occasional beat.
x0.00000300	25.5	+	Contracts on stimulation.
0.00000300	14.6	+	Contracts on stimulation.
0.00000300	33.0	+	Contracts on stimulation.
0.00000300	29.0	+	No contraction on stimulation.
0.00000335	31.0	+	Contracts on stimulation.
0.00000350	36.5	+	Contracts on stimulation.
0.00000350	26.0	+	No contraction on stimulation.

M. L. D. considered to be 0.0000030.

*"Out of order."

Female Leopard Frogs (Rana pipiens) from Illinois.

Weights ranged from 25.5 to 36.3 grams.
Temperature of room, 11.5° to 22° C.
Temperature of water in tank, 13° to 14° C.

Dose	Weight		Results
0.000002	29.5	—	Beats.
0.000002	28.9	+	Contracts on stimulation.*
0.000002	27.0	—	Occasional beat.
0.0000023	25.5	—	Beats.
0.0000023	27.0	—	Occasional beat.
0.0000023	36.3	+	Contracts on stimulation.*
x0.0000025	31.0	+	Contracts on stimulation.
0.0000025	31.3	+	Contracts on stimulation.
0.0000025	26.1	+	Contracts on stimulation.
0.0000027	30.7	+	Contracts on stimulation.
0.0000030	33.0	+	Contracts on stimulation.
0.0000034	28.3	+	No contraction on stimulation.

M. L. D. considered to be 0.0000025.

DECEMBER, 1911.

Male Leopard Frogs (Rana pipiens) from Illinois.

Weights ranged from 16.36 to 27 grams.
Temperature of room 18° to 23° C.
Temperature of water in tank, 12° to 16° C.

Dose	Weight		Results
0.00000055	23.0	—	Beats.
0.00000060	24.4	—	Beats.
0.00000065	24.7	—	Occasional beat.
0.00000070	27.0	—	Auricle beats.
0.00000090	23.0	—	Beats.
0.00000100	17.36	—	Beats.
0.00000100	18.6	—	Occasional beat.
x0.00000125	20.9	+	Contracts on stimulation.
0.00000125	24.2	+	Contracts on stimulation.
0.00000125	19.5	+	Contracts on stimulation.
0.00000150	20.2	+	No contraction on stimulation.
0.00000200	21.9	+	No contraction on stimulation.
0.00000300	18.0	+	No contraction on stimulation.

M. L. D. considered to be 0.00000125.

Female Leopard Frogs (Rana pipiens) from Illinois.

Weights ranged from 16.8 to 25.1 grams.
Temperature of room, 16° to 23° C.
Temperature of water in tank, 13° to 16° C.

Dose	Weight		Results
0.00000055	25.1	+	No contraction on stimulation.*
0.00000055	18.83	—	Beats.
0.00000060	19.5	—	Beats.
0.00000070	17.6	—	Beats.
0.00000080	22.7	—	Beats.
0.00000085	16.8	+	Contracts on stimulation.*
0.00000085	19.5	—	Beats.
0.00000085	20.0	—	Beats.
0.00000090	20.7	+	Contracts on stimulation.*
0.00000090	19.5	—	Beats.
0.00000095	20.2	—	Occasional beat.
x0.00000100	18.0	+	Contracts on stimulation.
0.00000100	20.2	+	Contracts on stimulation.
0.00000125	23.8	+	No contraction on stimulation.
0.00000150	20.2	+	No contraction on stimulation.

M. L. D. considered to be 0.000001.

*"Out of order."

JANUARY, 1912.

Male Leopard Frogs† (Rana pipiens) from Illinois.

Weights ranged from 20 to 35.8 grams.
Temperature of room, 16 to 21° C.
Temperature of water in tank, 5° to 7° C.

Dose	Weight		Results
0.0000025	22.5	—	Beats.
0.0000035	23.9	—	Occasional beat.
0.000004	23.5	—	Beats.
0.000004	20.0	—	Beats.
0.000005	29.7	—	Beats.
x0.000005	22.0	+	No contraction on stimulation.
0.000006	21.5	+	Contracts on stimulation.
0.000006	35.8	—	Auricle beats.*
0.000007	21.0	+	Contracts on stimulation.
0.000007	22.7	+	Contracts on stimulation.

M. L. D. considered to be 0.000005.

Female Leopard Frogs† (Rana pipiens) from Illinois.

Weights ranged from 12 to 35.7 grams.
Temperature of room, 18° to 19.5° C.
Temperature of water in tank, 4.5° to 7.5° C.

Dose	Weight		Results
0.000001	21.1	—	Beats.
0.000001	23.5	—	Beats.
0.000001	22.9	—	Slight beat.
0.000002	22.5	—	Beats.
0.000003	18.3	—	Beats.
0.000003	12.0	+	Contracts on stimulation.*
0.000004	35.7	—	Auricle beats.*
x0.000004	22.0	+	No contraction on stimulation.
0.000004	19.4	+	No contraction on stimulation.
0.000004	19.4	+	No contraction on stimulation.
0.0000045	19.2	+	No contraction on stimulation.
0.0000045	23.0	—	Beats.
0.000005	19.5	+	Contracts on stimulation.
0.0000055	15.7	+	No contraction on stimulation.
0.000007	20.0	+	No contraction on stimulation.
0.000008	29.5	+	No contraction on stimulation.

M. L. D. considered to be 0.000004.

FEBRUARY, 1912.

Male Leopard Frogs (Rana pipiens) from Illinois.

Weights ranged from 14.2 to 25. grams.
Temperature of room, 18° to 20° C.
Temperature of water in tank, 7° to 7.5° C.

Dose	Weight		Results
0.000002	20.0	—	Beats.
0.000003	19.6	—	Beats.
0.000003	23.0	—	Beats.
0.000003	21.1	—	Beats.
0.000004	14.2	—	Beats.
x0.000004	14.2	+	Contracts on stimulation.
0.000004	22.0	+	Contracts on stimulation.
0.000005	18.8	+	No contraction on stimulation.
0.000005	17.0	—	Non-absorption.*
0.000005	17.2	+	Contracts on stimulation.
0.000005	16.39	—	Beats.*
0.0000055	19.0	+	Contracts on stimulation.
0.0000055	20.4	+	No contraction on stimulation.
0.0000055	22.0	+	Contracts on stimulation.
0.000006	21.2	+	Contracts on stimulation.
0.000006	25.0	+	No contraction on stimulation.
0.0000065	16.7	+	No contraction on stimulation.
0.0000070	21.7	+	No contraction on stimulation.
0.0000080	21.7	—	Non-absorption.*

M. L. D. considered to be 0.000004.

†Badly frozen when received.
*"Out of order."

Female Leopard Frogs (Rana pipiens) from Illinois.

Weights ranged from 14.3 to 31.5 grams.
Temperature of room, 18° to 20° C.
Temperature of water in tank, 7° to 7.5° C.

Dose	Weight		Results.
0.000002	22.1	—	Beats.
0.000003	31.5	—	Auricle beats.
0.000003	14.3	—	Beats.
0.000003	29.4	—	Occasional beat.
0.000003	16.2	+	No contraction on stimulation.*
x0.000004	20.0	+	Contracts on stimulation.
0.000004	21.4	+	Contracts on stimulation.
0.000005	23.0	+	Contracts on stimulation.
0.000005	20.5	+	No contraction on stimulation.
0.0000055	17.8	+	Auricle contracts on stimulation.
0.000006	20.2	+	No contraction on stimulation.

M. L. D. considered to be 0.000004.

MARCH, 1912.

Male Leopard Frogs (Rana pipiens) from New Jersey.

Weights ranged from 17.3 to 31.2 grams.
Temperature of water in tank, 7° to 8° C.
Temperature of room, 18.5° to 22.° C.

Dose	Weight		Results
0.000001	25.1	—	Beats.
0.000001	31.2	—	Beats.
0.0000012	30.5	—	Beats.
x0.0000015	17.3	+	Auricle contracts on stimulation.
x0.0000015	29.5	+	Contracts on stimulation.
0.0000015	25.7	+	Contracts on stimulation.
0.0000020	23.8	+	No contraction on stimulation.
0.0000025	25.2	+	No contraction on stimulation.
0.0000030	21.9	+	No contraction on stimulation.

M. L. D. considered to be 0.0000015.

Female Leopard Frogs (Rana pipiens) from New Jersey.

Weights ranged from 18.8 to 30.6 grams.
Temperature of water in tank, 7° to 14° C.
Temperature of room, 16.5° to 22°C.

Dose	Weight		Results
0.000001	18.8	—	Beats.
0.0000015	23.2	—	Beats.
0.0000015	29.7	+	No contraction on stimulation.*
0.0000015	25.5	+	No contraction on stimulation.*
0.0000015	25.8	—	Beats.
0.0000020	19.2	—	Beats.
0.0000020	23.3	—	Beats.
0.0000020	29.2	—	Occasional beats.
x0.0000025	27.2	+	Contracts on stimulation.
0.0000025	27.2	+	No contracton on stimulation.
0.0000025	24.0	+	Contracts on stimulation.
0.0000030	30.6	+	Contracts on stimulation.
0.0000035	24.5	+	No contraction on stimulation.
0.0000035	26.8	+	No contraction on stimulation.

M. L. D. considered to be 0.0000025.

*"Out of order."

APRIL, 1912.

Male Leopard Frogs (Rana pipiens) from New Jersey.

Weights ranged from 22.8 to 41 grams.
Temperature of room, 18° to 22° C.
Temperature of water in tank, 11° to 13° C.

Dose	Weight		Results
0.0000009	41.0	—	Beats.
0.0000009	39.3	—	Beats.
0.0000010	34.0	+	No contraction on stimulation.*
0.0000010	38.2	+	Beats.
0.0000010	34.0	—	Beats.
0.0000012	24.0	+	No contraction on stimulation.*
0.0000012	26.0	—	Occasional beat.
0.0000012	32.0	—	Occasional beat.
0.0000015	22.8	—	Occasional beat.
0.0000015	29.3	+	No contraction on stimulation.*
0.0000015	28.5	—	Beats.
x0.0000017	27.0	+	No contraction on stimulation.
0.0000017	30.0	+	Contracts on stimulation.
0.000002	29.0	+	No contraction on stimulation.
0.000002	31.0	+	No contraction on stimulation.

M. L. D. considered to be 0.0000017.

Female Leopard Frogs (Rana pipiens) from New Jersey.

Weights ranged from 25.8 to 44.5 grams.
Temperature of room, 18° to 22° C.
Temperature of water in tank, 11° to 13° C.

Dose	Weight		Results
0.0000008	40.0	—	Beats.
0.0000009	39.5	—	Beats.
0.0000009	44.5	—	Auricle beats.
x0.000001	25.8	+	Contracts on stimulation.
0.000001	28.0	+	Auricle contracts on stimulation.
0.0000015	41.0	+	No contraction on stimulation.
0.000002	30.5	+	No contraction on stimulation.
0.0000025	30.5	+	Contracts on stimulation.
0.000003	33.2	+	No contraction on stimulation.

M. L. D. considered to be 0.000001.

MAY, 1912.

Female Leopard Frogs (Rana pipiens) from New Jersey.

Weights ranged from 23.5 to 48.9 grams.
Temperature of room, 24° to 28.5° C.
Temperature of water in tank, 21° to 27.5° C.

Dose	Weight		Results
0.0000008	24.5	—	Auricle beats.
0.0000009	48.9	—	Beats.
0.0000009	23.7	—	Beats.
0.0000010	30.6	—	Beats.
x0.0000010	23.5	+	Contracts on stimulation.
0.0000010	30.0	+	Contracts on stimulation.
0.0000012	35.4	+	No contraction on stimulation.
0.0000014	33.5	+	No contraction on stimulation.
0.0000015	33.0	+	No contraction on stimulation.
0.0000020	28.0	+	No contraction on stimulation.

M. L. D. considered to be 0.000001.

*"Out of order."

JUNE, 1912.

Male Leopard Frogs (Rana pipiens) from New Jersey.

Weights ranged from 12.7 to 26.1 grams.
Temperature of laboratory, 27° to 30° C.
Temperature of water in tank, 24° to 25° C.

Dose	Weight		Results
0.0000006	18.5	—	Beats.
0.0000008	20.0	—	Beats.
0.0000009	20.0	—	Beats.
0.00000095	26.1	—	Beats.
0.0000010	12.7	—	Beats.
x0.0000010	25.5	+	Contracts on stimulation.
0.0000015	19.5	+	Contracts on stimulation.

M. L. D. considered to be 0.000001.

JULY, 1912.

Male Leopard Frogs (Rana pipiens) from New Jersey.

Weights ranged from 25.5 to 48.5 grams.
Temperature of room, 27.5° to 30° C.
Temperature of water in tank, 25° to 26° C.

Dose	Weight		Results.
0.0000002	27.2	—	Beats.
0.00000025	37.6	+	Contracts on stimulation.*
0.0000003	27.5	+	Contracts on stimulation.*
0.0000003	35.6	—	Occasional beat.
0.00000035	48.5	—	Beats.
0.00000035	25.5	—	Beats.
x0.0000004	29.1	+	Contracts on stimulation.
0.0000004	26.8	+	No contraction on stimulation.
0.00000045	28.0	—	Beats.*
0.00000045	26.1	+	No contraction on stimulation.
0.0000005	26.2	+	No contraction on stimulation.

M. L. D. considered to be 0.0000004.

Female Leopard Frogs (Rana pipiens) from New Jersey.

Weights ranged from 20 to 42 grams.
Temperature of room, 26° to 29.5° C.
Temperature of water in tank, 22.5° to 27.5° C.

Dose	Weight		Results.
0.0000002	24.5	—	Beats.
0.00000025	24.3	—	Auricle beats.
0.00000025	30.0	—	Auricle beats.
0.00000030	29.5	+	Contracts on stimulation.*
0.00000030	38.0	—	Beats.
0.00000030	34.5	—	Beats.
x0.00000035	42.0	+	Contracts on stimulation.
0.00000035	26.0	+	Contracts on stimulation.
0.00000040	28.0	+	No contraction on stimulation.
0.00000060	20.0	+	No contraction on stimulation.
0.00000080	20.8	+	No contraction on stimulation.
0.0000012	21.1	+	No contraction on stimulation.

M. L. D. considered to be 0.00000035.

Summary of smallest amounts required to produce systolic stoppage of the heart in one hour—the amounts stated representing milligrams per gram weight of frog:

	Males Illinois	Females Illinois	Males New Jersey	Females New Jersey	Average
August, 1911. Lab. 25.5—28.5° C. Tank 26.5—29.5° C.	0.00032	0.00038	.....	.....	0.00035.
September, 1911. Lab. 23.—25.5° C. Tank 21—23° C.	0.00038	0.00030	.....	.....	0.00034

*"Out of order."

October, 1911. Lab. 23.5—25.5° C. Tank 18—19.5°C.	0.00055	0.00055	.....	.....	0.00055
November, 1911. Lab. 11.5—24° C. Tank 13.—15° C.	0.00300	0.00250	.....	.....	0.00275.
December, 1911. Lab. 16—23° C. Tank 12—16° C.	0.00125	0.00100	.....	.....	0.00112.
January, 1912. Lab. 16—21° C. Tank 4.5 to 7.5° C.	0.00550	0.00350	.....	.....	0.00450.
February, 1912. Lab. 18—20° C. Tank 7—7.5° C.	0.00400	0.00400	.....	.....	0.00400
March, 1912. Lab. 16.5—22° C. Tank 7—14° C.	.....	.....	0.00150	0.00250	0.00200
April, 1912. Lab. 18—22° C. Tank 11—13° C.	.....	.....	0.00170	0.00100	0.00135
May, 1912. Lab. 24—28.5° C. Tank 21—27.5° C.	.....	.....	.....	0.00100	0.00100
June, 1912. Lab. 27—30° C. Tank 24—25° C.	.....	.....	0.00100	.....	0.00100
July, 1912. Lab. 26—30° C. Tank 22.5—27.5° C.	.....	.....	0.00040	0.00035	0.00037
Average	0.00214	0.00175	0.00115	0.00121	0.00161

The extreme range for the male Illinois frogs is 0.00032 to 0.00550 or from 85 percent below to 157 percent above the average of 0.00214. The range for the female Illinois frogs is 0.00030 to 0.00400 or from 83 percent below to 128 percent above the average of 0.00175. The range for the male New Jersey frogs is 0.00040 to 0.00170 or from 65 percent below to 48 percent above the average of 0.00115. The range for the female New Jersey frogs is 0.00035 to 0.00250 or from 71 percent below to 107 percent above the average of 0.00121. That the variation is not in accordance with the temperatures, except in a very general way, is readily seen by comparing the results for October, November, and December, and again for June and July. This does not preclude the possibility of obtaining valuable information as to the strength of preparations if each lot of frogs be "standardized" at the time of making the assay. That the variation in the susceptibility of frogs, however, is many times as great as that of guinea pigs is readily apparent by comparing these results with those set forth in another paper presented to this Section.

PHYSIOLOGIC LABORATORY OF H. K. MULFORD CO., August 6, 1912.

Section on Commercial Interests

Papers Presented at the Sixtieth Annual Convention

THE DRUGGIST AND THE PAY TELEPHONE. A CONTRIBUTION TO THE HISTORY OF THE INTRODUCTION AND USE OF THE PAY TELEPHONE IN THE DRUG STORE.

GEO. S. HUMPHRIES AND F. C. GODBOLD, NEW ORLEANS, LA.; W. H. LAMONT, ST. LOUIS, MO.; B. E. PRITCHARD, PITTSBURGH, PA.; J. O. BURGE, NASHVILLE, TENN.

THE NEW ORLEANS STORY.

About four years ago, working under the free lunch system of telephones, the druggists of the city of New Orleans were harassed and inconvenienced by their customers, and on several occasions, because of the antagonistic tactics adopted by the Cumberland T. & T. Co., in opposition to party lines, the service was, to say the least, very unsatisfactory. Parties desiring to use the phones were annoyed by the long delay in getting the person whom they desired. Under these conditions the O. P. Association appealed to the N. A. R. D. Telephone Committee at headquarters, and in reply to this appeal the late Mr. McDonald wrote to the Association that if they would stand his expense to New Orleans, he would endeavor to straighten out matters. After discussing the situation from all sides, it was decided to decline the offer.

A few months later, The Independent Telephone Company, of St. Louis, asked the City Council for a franchise. The druggists became active and favored the granting of the said franchise. The Cumberland T. & T. Co., hearing of this action, requested the Orleans Pharmaceutical Association to allow them to send Mr. McDonald and their general soliciting agent to New Orleans, with a view of recommending a service which would be satisfactory. Complying with that request, a meeting between the representative of the Telephone Company and the Association was arranged, and on March 31st, 1908, an agreement was entered into between the above named parties for pay phones to be installed in each drug store, on a basis of $4.50 per month for the Telephone Company, and 50 percent of all above that amount to go to the druggist and 50 percent to the Telephone Company. No guarantee as to the amount of receipts.

Realizing the up-hill work that this would entail upon the Committee, it being a new venture, a clause was inserted stating that the contract was not to be binding until after a six months' satisfactory trial. When the Committee called upon the druggists with this proposition they met with all kinds of objections, some druggists going so far as to state that if they put a pay phone in their stores for six months, that before the expiration of that time they would be out of business. With all the objections, however, the Committee succeeded in securing

a sufficient number of druggists to sign the agreement, and it was put into effect. At the expiration of the six months' trial, it was gratifying indeed to learn that not a single druggist in the city of New Orleans would part with the pay system, and every drug store was in line.

The benefits from the nickel-in-the-slot machine, both to the druggist and the Cumberland T. & T. Co., are very gratifying, some of the druggists receiving as high as $60.00 per month for their share of the tolls. It is doubtful if the druggists would part with the pay system, as the service is satisfactory. The customers are pleased, and thank the druggist with a pleasant smile after using the phone and paying for same.

GEORGE S. HUMPHRIES,
Member of Telephone Committee.

THE PHILADELPHIA STORY.

Mr. Garwood gives the following information: He states that from 1895 until 1905 he represented the Telephone Company in all matters brought up by the Druggists' Association. He remembers from time to time of entertaining representatives of the Druggists' Association, but to the best of his recollection he was never in receipt of any official communication from them or received a call from an official representative.

As he remembers the druggists' pay station conditions in Philadelphia during that period, the druggists first asked the Telephone Company to put in pay stations, when they were not equipped with sufficient plant to enable them to put in the telephones. Afterwards, the Telephone Company attempted to install pay stations in all drug stores, but that the druggists could not agree with the Telephone Company, claiming that the commission to be allowed them was not sufficient for the labor performed and the space given over for the service. Then, later, the druggists saw the advantage to them of having pay stations in the stores, but the Telephone Company was not willing to pay them the commission demanded. Unfortunately, Mr. Garwood does not remember the basis of the commission offered at that time, and there is no record in this office to furnish this information.

W. W. HENDERSON, Cashier Bell Telephone Company.

THE PITTSBURGH STORY.

In the beginning there was no relation, not even the much despised "poor relation" between the druggists of this city and the Telephone Companies. The druggist simply took his place in line with the multitude and took what he could get, as one of the proletariat.

As soon as the people learned that there was a telephone at the drug store, free to all comers at nothing per, the lines got busy at once, at the cost of the druggist, of course. Sometimes when there chanced to be a break in the stream of neighbors long enough to permit it, the druggist got his chance to do a little business on the line himself. Any customer who might want to telephone an order to the drug store occasionally was surprised to hear central say in response to the call for the druggist's number, "All right," but in most instances it would be "Line's busy." And all this time the druggist paid the freight.

Of course, it would be manifestly unfair to lay the blame for such conditions

at the door of the Telephone Companies, for it was the fault of the subscriber, who was allowing himself to be imposed upon. The loss fell, perhaps, as heavily upon the company as upon the druggist who permitted the abuse to continue. So when, through the efforts of the Telephone Committee, the Western Pennsylvania Retail Druggists' Association took up the matter of improving conditions, it did not take very long to convince the Telephone Company officials that much business was being done over its lines for which it received no remuneration; while, at the same time, the druggist was receiving neither remuneration nor recognition for service rendered to the dear, cheap public.

In the beginning of the "pay-as-you-call" system, the drug store phone outfit merely consisted of a wall set and a slot box into which the person desiring to use it was required to place one dime. The druggist whose box receipts showed over $10 per month received 10 percent of all moneys over that amount. It was soon demonstrated that a 10-cent call was too high to become popular, and returns were not satisfactory to either the telephone company, the druggist or the public. Right here is where we succeeded in getting the Bell Telephone Company to adopt a more liberal policy all around, and in consequence we now have a contract under the terms of which the Company, at its own expense, installs a booth with complete outfit in the drug store, and the person calling must deposit a nickel before the party called is placed on the line. The druggist guarantees $5 per month for service, and for all moneys over that amount he receives 20 percent commission, on local calls only. For long-distance calls, a smaller payment, but in the average drug store these are not frequent and as they usually involve a division of fees between two or more telephone companies, the commission must naturally be less.

The Telephone Company pays the druggist a fair sum for any messenger service required of the operator.

Conditions, and our relations with the Telephone Company, since this contract between the Bell Company and the W. P. R. D. A. has been in force (since October, 1909), have been very satisfactory, and the old-time loss and annoyance have been replaced by a paying side-line. The installation of booths resulted in greatly increasing the number of patrons, as did the reduction from 10 cents to 5 cents also.

The next thing the druggist must do is to have nerve and business sense enough to treat the stamp selling nuisance in a similar manner. The success of the telephone revolution shows conclusively that the public will pay for what it wants, but so long as the druggist is satisfied to supply its neeeds for nothing, let the fool fellow have his fill of it. That's how many people look at the free lunch proposition. B. E. PRITCHARD, Secretary W. P. R. D. A.

THE ST. LOUIS STORY.

Individual protest against the free telephone abuse in St. Louis took the form of a combined action of the Retail Druggists of the city during the administration of Charles Reimer, as President of the St. Louis Retail Druggists' Association, and resulted in an ultimatum being issued to the Kenloch Telephone Company to either install slot phones or remove the phones from the drug stores owned by the signers of the protest.

Much work towards combined action of the druggists was done by A. S. Ludwig, R. C. Reilley, E. A. Bernius, M. J. Noll, and Mr. Reiner, assisted by Joseph McDonald, of the American Telephone Company.

Much publicity was given the movement, and it appears from a casual observation to be surely crowned with success.

Almost every druggist signed a personal letter to the Kenloch Telephone Company, terminating his telephone contract and authorizing the removal of the instrument. These letters, or a major portion of them, were turned over to the Committee to be presented to the Company, when a rumor was circulated that through this combined action of the Association there might follow some legal complications, and there were but a few hours left to get the letters into the hands of the Company. Some of the intrepid allowed the letters to go in and some had the phones taken out, but a majority of phones remained in use, unaffected by the action.

The slot fight was lost, and the Kenloch phones are today in operation without a slot or pay device.

During the administration of H. O. A. Huegel, as President of the St. Louis Retail Druggists' Association, a telephone problem was presented by the Bell Telephone Company; that of withdrawing a scale percent of contents payment and place all phones, active or otherwise, productive or non-productive, upon a flat basis of 10 percent. Mr. Huegel entered into the fray with the same vim and activity that marks his every movement in pharmacy, and took the matter to the Public Service Commission of St. Louis and had every druggist in town up in arms against the Bell Telephone Company.

It is needless to say that the Bell Telephone Company did not place all the slot phones upon the same basis, and today the druggists are using the Bell phone under a contract of this nature:

The druggists guarantee 15 cents per day and get 10 percent of the contents of the box on a basis of 15 cents per day; or they guarantee 20 cents per day and get 20 percent of the contents on a 20 cents per day basis; or they guarantee 30 cents per day and get 30 percent; or 40 cents and get 40 percent.

This gives the good telephone corner a fine profit upon the space occupied by the Bell phone, and from all outward appearances and confidential expressions by the druggists, the telephone question is settled for some time to come.

W. H. LAMONT, St. Louis, Mo.

THE NASHVILLE STORY.

I find that the agitation started about five or six years ago, when the public use of the druggists' telephone became almost unbearable, both to the exchange and to the druggist, who was kept out of many sales by his line being busy, on account of which the Company had to furnish more operators. Tab was kept for ten days on the number of calls through drug store telephones and it was found that they ran from twenty to fifty, with an average of about forty. So, about two years ago, before the present arrangement was made, a committee of druggists, of which Mr. Ira B. Clark was Chairman, called on the manager and tried to come to some understanding, but failed at the time, and after about two years the present contract was entered into, the principal features of which are: The

contract is for five years, the Company furnishes the booths free, the first three calls each day go to the Telephone Company, or $4.50 per month, and all over that amount is divided equally between the Company and the druggist. The druggist gets 10 percent on all long-distance calls. He pays the same for his calls as others do, but to the City Hospital, Police and Fire Departments are free.

An extension line runs from most of the booths to the prescription counter, for which the druggist pays $1.00 per month. Many of the downtown druggists have two phones, one being free, for which they pay $7.00 per month, the same as other subscribers, but agree that they will not use this phone except for business calls. The contract has been in force about three and one-half years, and all parties appear to be perfectly satisfied with the arrangement. The druggist's telephone is a business getter instead of an annoyance to himself and an expense to the Company, as it was before the agreement.

J. O. BURGE.

PROTECTING THE PRICE.

Many manufacturers insist on the price of their product being maintained on a basis that insures good profit to every one who sells it. Why? Simply because they understand human nature and can sense the trend of the times. The manufacturer who simply "encourages" the maintenance of a fixed price never did and never will amount to anything as a price protector. The manufacturer who says he is "trying" to protect prices because he is "in sympathy with the retailer" is simply begging the question and has no backbone. Such an one does not deserve to have any co-operation from the retailer and should be turned down hard every time.

The wise manufacturer, the man who has the right stuff in his make-up, and who says emphatically to every one who sells his product that he will not permit their being sold without a profit, and insists firmly on his stipulation being carried out for the very excellent reason that it protects his own business is on the right track and will succeed.

Successful price maintenance requires something more than encouragement. You can encourage a wagon all you want to, but that will not make it move. The wagon must have some motive power attachment, a real force only will produce the desired effect. Hypnotism won't do the stunt.

The successful manufacturer of the future will know that a profit *must* be made on his product in order that "his life may be long in the land." That manufacturer who fails to recognize the right and necessity for the storekeeper to have a fair profit and does not compel him to take it, will fall by the wayside "and the place thereof shall know him no more."—*The Pittsburgh Druggist.*

Contributed and Selected

INFLUENCE OF ALCOHOL UPON THE TOXICITY OF DIGITALIS FOR GUINEA PIGS.

CHARLES C. HASKELL, INDIANAPOLIS, IND.

In a recent paper on biological standardization, Eggleston[1] draws attention to the fact that in Hatcher's cat method the presence of alcohol does not influence the results when the digitalis bodies are tested. He suggests that this may not be the case when the guinea pig or frog is used as a test animal. The following experiments were carried out upon guinea pigs and rabbits in the attempt to secure definite information regarding this point. The preparations tested were ordinary U. S. P. tinctures of digitalis, containing originally 48 percent alcohol, in which form they were used in the experiments recorded in Table 1. All injections were made subcutaneously with Hitchens' syringe[2] and the animals were observed for twenty-four hours. It was found convenient to cover the needle hole with collodion to prevent oozing of injected fluid. Doses are given in fractions of a cubic centimeter per gram body weight.

TABLE I.

A. Tests Upon Guinea Pigs.

Tr. No. 1.

Date	Survived	Died	Minimum Lethal Dose
6-11-12	.004 .004 .004 .0065 .007.		.007+

B. Tests Upon Rabbits.

Tr. No. 2.

9-26-12	.003 .006		.008+
9-27-12	.007 .008		

Portions of the two tinctures used in the preceding experiments were evaporated to a semi-fluid consistency on the water bath and this residue suspended in a volume of distilled water one-half that of the amount of tincture taken. When the injections were made an equal amount of distilled water was added, bringing the volume dose up to that of untreated tincture.

TABLE II.

A. Tests Upon Guinea Pigs.

Tr. No. 1 evaporated on water bath; residue suspended in distilled water.

Date	Survived	Died	Minimum Lethal Dose
6-14-12		0.0080	
		0.0075	
		0.0060	
			0.0045
6-15-12		0.005	
		0.005	
		0.0045	
6-17-12		0.0040	
10- 4-12	0.004	0.005	

B. Tests Upon Rabbits.

Tr. No. 2 evaporated on water bath; residue suspended in distilled water.

9-26-12	0.002		
	0.004		
9-27-12	0.005	0.006	
			0.006
9-28-12	0.005	0.006	
		0.006	
9-30-12		0.006	
		0.006	
		0.006	
10- 1-12	0.005		

It is evident from these figures that the original tinctures possessed considerably less toxicity for guinea pigs and rabbits than they did after removal of the alcohol. Several factors must be considered, however, before the assumption can be made that this difference is due to the antagonistic action between digitalis and alcohol. It is possible that heating the tinctures upon a water bath might cause a decomposition of the active glucosides into bodies of greater toxicity. The simplest way to decide this is to make the alcoholic strength of the suspension the same as that of the original tincture, and this was done in some instances by taking up the residue with 50 percent alcohol, in others, by using an equal volume of 95 percent alcohol, when the double-strength aqueous suspension was injected, whereby the suspension was brought up approximately to the original volume and alcoholic strength of the tincture.

TABLE III.

A. Tests Upon Guinea Pigs.

Aqueous suspension from Tr. No. 1 with alcohol up to 48% added.

Date	Survived	Died	Minimum Lethal Dose
6-15-12	0.007		
10- 3-12		0.014	0.008
		0.016	
10- 4-12	0.007	0.008	

B. Tests Upon Rabbits.

Aqueous suspension from Tr. No. 2 with alcohol up to 48% added.

9-28-12	0.008	0.009	0.009

TABLE IV.

A. Tests Upon Guinea Pigs.

Aqueous suspension from Tr. No. 1. 95% alcohol. Separate injection sites.

Date	Survived	Died	Minimum Lethal Dose
6-17-12		0.007 0.007	0.0045
10- 3-12		0.006 0.008	
10- 4-12	0.0035 0.0040		

B. Tests Upon Rabbits.

Aqueous suspension from Tr. No. 1. 95% alcohol. Separate injection sites.

9-30-13		0.007 0.007 0.008 0.008 0.006 0.006 0.006	.006

From this, it would seem that when alcohol is injected simultaneously with the treated tincture the toxicity of the latter is no greater than that of the original tincture; or, in other words, the heating and drying did not, in themselves, apparently increase the toxicity of the tincture. As further confirmation, one aqueous suspension was compared with the original tincture by means of Cushny's frog-heart method, and the strength fround to be practically the same.

Another point, however, is whether this decreased toxicity of digitalis in the presence of alcohol is due to a true antagonism between the two substances or due to some local action of the alcohol. To decide this, a series of injections was made into guinea pigs and rabbits, the aqueous suspension and 95 percent alcohol being used in equal volumes, but the injection sites being different. The results are given in Table IV.

From these results it would seem that the protective power of alcohol against poisoning by digitalis is due to some local action of the alcohol, because when the digitalis solution and the alcohol are injected into different spots the former appears to have fully as much toxicity for rabbits and guinea pigs as where no alcohol is used. From appearances at the end of 24 hours, the digitalis seemed entirely absorbed whether alcohol was present or not.

It is clearly evident, however, that when digitalis preparations are tested by subcutaneous administration to guinea pigs or rabbits, account must be taken of the alcoholic content of such preparations, because the results will be markedly influenced by the presence of considerable amounts of alcohol.

Experiments, which will soon be published, have been carried out upon frogs, using the one-hour method, and it has been found that alcohol to the amount of 25 percent has no influence upon the results. The dilution of most galenical preparations necessary for testing by Cushny's method reduces the alcoholic contents to this figure when normal saline or water is used as a diluent.

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2. Hitchens: Journal of Exper. Med., Vol. VIII, page 646.

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PHYTOCHEMICAL NOTES.*

73. OIL FROM MENTHA CITRATA.

R. C. ROARK.

Volatile oils of various species of mint have long been known and are used in large quantities, but the oil obtained from *Mentha citrata* Ehrh. appears to have received but little attention until comparatively recently.

In the Cyclopedia of American Horticulture, 1903, in the article "Mentha" by Lyster H. Dewey, this statement appears, following a botanical description of the *Mentha citrata*—"The fragrant lemon-scented oil is distilled for use in making perfumes."

In the Report of Schimmel & Co., for April, 1904, p. 95, there is an account of a chemical examination of the oil from this plant. The yield of oil from young, not flowering, but fresh plants, without roots, was about 0.2 p. c. The oil was of a pale yellow color, had an odor suggestive of lavender oil, and possessed the following constants: d_{15}=0.8826; a_D=—5°35′; ester number=31.28, corresponding to 10.95 p. c. linalyl acetate; soluble in two and more volumes of 70 p. c. alcohol. From the same plant a distillate was obtained from the frozen leaves in about the same yield. The constants of this oil were d_{15}°=0.8895; a_D=—1°41′; ester number=111.28, corresponding to 38.95 p. c. linalyl acetate; soluble in two and more volumes of 70 p. c. alcohol.

In the exhibit[1] of E. Moulié at the Florida State Fair, Tampa, 1906, there were samples of the "dried *Mentha citrata* flowers (No. 10); "powdered *Mentha citrata* leaves, for sachet bags" (No. 7); "pomade, by enfleurage, of the *Mentha citrata* leaves for blending and coloring purposes" (No. 26); "pomade, by enfleurage, of the *Mentha citrata* leaves for blending and perfuming purposes" (No. 27); "cohobated water distillate of *Mentha citrata*" (No. 32); "volatile of *Mentha citrata* (Bergamot mint) on its water distillate" (No. 41), and finally a "stock syrup of *Mentha citrata*" (No. 47). In the descriptive catalogue of this exhibit it is stated by Moulié that the voltaile oil of *Mentha citrata*, or Bergamot mint as it is sometimes called, was "originated" in 1892.

For several years *Mentha citrata* has received the attention of Dr. R. H. True and his collaborators in the Bureau of Plant Industry. It was at the suggestion of Dr. True that roots, sent from Washington, were planted in the garden of the Northern Station for the Cultivation of Medicinal Plants at Madison. As a result, a very small amount of oil was distilled during the summer of 1909,[2] but not enough to work with. During the summer of 1910 a somewhat larger amount of oil was distilled.[3] Although insufficient for a thorough investigation, it sufficed for a preliminary examination.

The oil had a clear yellow color, an intense but rather pleasant odor, and had the following properties, viz., $d=_{22}$°=0.895; refractive index at 19.5°=1.4555; optical rotation in a 200 mm. tube=—17°.6.

Small amounts of oil, 5 cc., were shaken with a 30 p. c. solution of sodium

*From the laboratory of Edward Kremers.
[1]Descriptive catalogue of the Franco-American Florida Floral Perfumery.
[2]See Report for 1909, made by the Agent to Dr. True.
[3]See Report for 1910, made by the Agent to Dr. True.

bisulphite; two samples were treated at room temperature and two others were heated in a simmering water bath, for about 20 minutes. After standing some time the resulting volume of oil was read in an ordinary cassia flask.

The results were as follows:

5 cc. of oil heated with bisulphite solution, vol.=4.85 cc.
5 cc. of oil heated with bisulphite solution, vol.=4.80 cc.
5 cc. of oil treated with bisulphite solution at room temperature, vol=4.85 cc.
5 cc. of oil treated with bisulphite solution at room temperature, vol.=4.80 cc.

Percentage of aldehydes=3.50 p. c. The above results indicate that it apparently makes no difference whether the aldehydes are shaken out either at room temperature or at the temperature of a water bath.

A larger amount of oil, 50 cc., was then treated similarly. The bisulphite was separated from the oil, sodium carbonate added to excess, and the liquid distilled. No oil separated from the distillate, which, however, had a perceptible odor. The oil, shaken out of the aqueous distillate, had a very pleasant ethereal odor and was very volatile, passing off with the ether vapor.

The oil from which the aldehydes had been removed by the bisulphite solution, was washed carefully with a dilute solution of sodium carbonate, then with distilled water, and finally dried. Portions of this oil were saponified by boiling with an excess of approximately N/2 alcoholic potassa for 30 minutes on the water bath in a flask fitted with a reflux condenser.

(1) 1.71 grams oil required for saponification 0.2694 g. KOH. Sap. No.=230.0.
(2) 0.882 grams oil required for saponification 0.2071 g. KOH. Sap. No.=234.7.

Computed as linalyl acetate this corresponds to from 80.50 to 82.15 p. c.

The whole of the oil was then saponified in the same way. After saponification, the odor of the oil was changed, a lavender-like odor being noticed. The sponified oil in a 100 mm. tube gave an optical rotation of —15°.85.

The saponified oil was removed from the excess of alkali by steam distillation and was separated, washed, and dried in the usual manner. The amount of oil was too small for fractionation. A portion, 10 cc., of this oil was acetylated by boiling for 3 hours with an equal volume of acetic acid anhydride, with the addition of a gram or so of anhydrous sodium acetate, in an acetylation flask. After acetylation, the oil had an odor still more suggestive of that of lavender oil.

The acetylated oil was separated, washed thoroughly with a dilute solution of sodium carbonate and with distilled water, and then dried. Portions of this oil were saponified with the following results:

1.741 grams oil required for saponification 0.3175 g. KOH. Sap. No.=182.
1.759 grams oil required for saponification 0.3259 g. KOH. Sap. No.=185.

Computed as linalyl acetate this corresponds to from 63.70 to 64.75.

Although the presence of linalyl acetate has only been assumed and not at all proven, this discrepancy between the original ester content and the lower ester content of the acetylated oil is in harmony with the assumption of the presence of linalool, which is partly decomposed by the acetic acid anhydride during the acetylation process.

The alkaline solution from which the saponified oil had been removed by steam distillation, was diluted, acidified with sulphuric acid, and again subjected to steam distillation. A strong odor of sulphur dioxide was noticed, thus revealing that some of the aldehyde hydroxy sulphonate had not been removed by washing. A small amount of oil collected on the surface of the distillate. Barium

carbonate was added in excess, the precipitate filtered off, the filtrate evaporated to a small bulk, again filtered, and allowed to evaporate to dryness over sodium hydroxide. Leaf-like crystals were deposited. These were dissolved in a small quantity of hot water, the solution filtered, and after the addition of a drop of dilute nitric acid, silver nitrate was added. This precipitated a salt which in a few seconds turned brown and then black. This mixture was heated, the black substance was filtered off, and upon chilling the filtrate, a white salt was obtained. This salt was unstable, turning dark upon standing. The salt was filtered off, dried on porous plate over sulphuric acid, and the silver determined as silver chloride.

0.1006 g. salt gave 0.0858 g. silver chloride.
Percentage of silver in salt=64.24.
Calculated for silver acetate=64.66.

The solution of the barium as well as of the silver salt in hot water had a distinct fatty acid odor, thus indicating the presence of at least traces of other acids.

PHYTOCHEMICAL NOTES.*

78. AN UNUSUAL OIL OF WORMWOOD.

R. C. ROARK.

Several years ago there was left at the laboratory a sample of oil of wormwood by Mr. Leander Drew, the well-known wormwood distiller of Sauk Co., Wisconsin. For more than half a century wormwood has been cultivated and distilled in Sauk Co. by three generations of the Drew family. This sample of about a pound had been set aside by Mr. Drew because of its unusual density. Mr. Drew could not account for the peculiarity of the sample which in other respects resembled the general run of oil of the same still and season.

The specific gravity of the oil determined by means of a Mohr-Westphal balance at 21.5° was found to be 1.000. The usual density of wormwood oil is supposed to vary between 0.925 and 0.955[1]

The saponification number was first ascertained in the usual manner by boiling about 2 grams with 20 cc. N/2 alcoholic potassium hydroxide solution for 40 minutes. Two determinations yielded 151 and 150 respectively as saponification numbers.

Owing to the dark color of the reaction mixture, the method of saponification was modified in a manner that has proven effective on previous occasions. About 5 grams of oil were heated with 50 cc. of N/2 alcoholic potassium hydroxide solution for 90 minutes. The saponification mixture was transferred to a 500 cc. measuring flask and diluted with water so that the oil rose above the mark in the neck of the flask, thus yielding exactly 500 cc. of aqueous alkaline liquid. The reaction mixture thus diluted was next transferred to a separating funnel and the aqueous portion was drawn off through a filter. Of the filtrate, portions of 100 cc. were used for titration with standard acid. The dark oil being thus

*From the laboratory of Edward Kremers.
[1]G. H. K., The volatile oils, p. 685.

removed from the aqueous alkaline reaction mixture, titration with standard acid became much easier. 181 and 182 respectively were the saponification numbers obtained in two separate experiments.

After this the bulk of the oil, 297 grams, were saponified by boiling for 1 hour with 420 grams of potassium hydroxide dissolved in alcohol. The mixture was then subjected to steam distillation. After the alcohol had distilled over, the oil was collected, the last portion of which was green.

Sulphuric acid was now added in slight excess to the alkaline residue and the steam distillation resumed. An aqueous acid distillate was thus obtained. From the residual water there separated upon cooling a large quantity of white crystals in addition to tar. More crystals were obtained from the tar itself by boiling with hot water, etc. The original crystals, purified by re-crystallization, melted at 146 to 152°; those obtained from the tar at 152-153°. The combined crystals, purified still farther by re-crystallizing twice from water, melted at 156.°

Melting point, solubility, color test with ferric chloride, and odor test when heated with sulphuric acid and methyl alcohol all point to salicylic acid. The exact amount of salicylic acid present was not ascertained. After the saponification, 160 grams of oil had been recovered and 70 grams of tar, leaving a difference of 67 grams, the greater portion of which probably was salicylic acid.

The aqueous distillate obtained from the steam distillation of the acidified saponification reaction mixture was neutralized with an excess of barium carbonate and the solution of barium salts evaporated. Organic acids present were precipitated in the usual manner as silver salts, the precipitation, however, being conducted fractionally. Of the silver precipitates thus obtained silver determinations were made with the following results:

(1.) 0.230 grams of the first precipitate yielded, on ignition, 0.170 of metallic silver, corresponding to 73.9 p. c. silver: Calculated for silver formate 70.6 p. c. silver.

(2.) 0.319 grams of the third precipitate yielded, on ignition, 0.141 grams of metallic silver, corresponding to 44.2 p. c. of silver. Calculated for silver salicylate 44.1 p. c.

Of the oil distilled over from the alkaline reaction mixture, 10 cc. were acetylized in the usual manner. The acetylized oil yielded upon saponification 229.7 and 234.8 respectively as saponification numbers.

The remainder of the oil, 150 grams, or about 168 cc., was fractionated, the bulk, 125 cc., distilling over between 145 and 200.° It had a specific gravity of 0.9127 at room temperature. Allowed to stand for 11 days with 50 cc. of alcohol and 125 cc. of a saturated solution of sodium bisulphite, 40 grams of crystals, presumably the thujone addition product were obtained. The remaining oil upon fractionation was collected in three fractions:

I—185 to 190°
II—190 to 195°
III—195 to 200°

At this point the study of this peculiar oil had to be broken off. Its principal interest lies in the unaccountable presence of salicylic acid. None of the other oils distilled semi-occasionally on the Drew farm is supposed to contain salicylic acid, neither are any of the weeds on the farm known to contain this acid.

ON CRYSTALLINE KOMBE'-STROPHANTHIN.

D. H. BRAUNS, PH. D., AND O. E. CLOSSEN, PH. B., DETROIT, MICH.

(Concluded from page 724)

The results with crystalline Kombe strophanthin on the heart of frogs are seen in Table III:

TABLE III. Focke Method.

9/23/10 Crystalline Kombe strophanthin.

Dose per gm. of frog.	0.000001 gm.	0.0000015 gm.	0.000002 gm.
Intervals in minutes until ventricles stopped beating.	11 Min. 14 " 13 " 16 " 10 "	13 Min. 14 " 12 " 12 " 10 "	9 Min. 10 " 11 " 10 " 11 "
Average	13 Min.	12 Min.	10 Min.

9/27/10

Dose per gm of frog.	0.000001 gm.	0.000002 gm.	0.000004 gm.
Intervals in minutes.	19 Min. 18 " 15 " 9 " 10 "	16 Min. 13 " 10 " 15 "	10 Min. 10 " 8 " 6 " 10 "
Average	16 Min.	13.5 Min.	9 Min.

The lack of uniformity in the above table is not surprising to anyone who has observed the gradual and erratic cessation of the ventricle beat. The personal factor largely enters on account of their being no sharp end point. After the ventricle has stopped beating, a slight jar or noise will often induce muscular movements of the frog sufficient to force blood into the ventricle, when it will start up and beat again for some time.

We found the method very unsatisfactory and agree with Edmunds and Hale[38] when they say, "We believe that this method allows of greater variations and inaccuracies than any other method we employed."

If the frogs are examined at the end of one hour for complete stoppage of the heart in systole, a more uniform result is obtained, as appears from Table IV:

TABLE IV.

Crystalline Kombe strophanthin (fr. identified seed.)

Dose per gm. of frog.	0.0000011 gm.	0.0000012 gm.	0.0000013 gm.
Conditions of heart at 1 hour.	3 beating 0 stopped	6 beating 1 stopped	0 beating 7 stopped

We believe any physiologic method for the assay of heart tonics should have as a basis some definite standard, e. g., Tr. Strophanthus, or better, crystalline strophanthin. The sharper and more definite the end point the more exactly can physiological reactions be compared.

[38]Bulletin 48, Hygienic Laboratory, p. 45.

Protocol of the toxicity tests of November 1, 1910:

TABLE V.

Cry. K. strophanthin.				Amor. acid strophanthin from cry. K. strophanthin.				Standard Average Tincture.			
	Dilution 1 in 50,000				Dilution 1 in 12,500				Dilution 1 in 500		
Wgt. frog.	Dose in gm. per gm.	Full dose	Result.	Wgt. frog.	Dose in gm. per gm.	Full dose	Result.	Wgt. frog.	Dose in cc. per gm.	Full dose	Result.
13.5	.00000090	.605 cc.	L.	21.5	.0000026	.70 cc.	L.	16.5	.000066	.545 cc.	L.
14.0	.00000090	.63 cc.	L.	17.0	.0000028	.895 cc.	L.	16.5	.000066	.64 cc.	L.
16.0	.00000090	.72 cc.	L.	17.0	.0000028	.595 cc.	D.	17.5	.000069	.60 cc.	L.
14.0	.00000095	.665 cc.	D.	17.5	.000003	.655 cc.	D.	20.5	.000069	.70 cc.	D.
14.0	.00000095	.665 cc.	D.	17.5	.000003	.655 cc.	D.	17.5	.000072	.65 cc.	D.
14.5	.00000095	.69 cc.	D.	18.0	.000003	.675 cc.	D.	20.5	.000072	.74 cc.	D.

In the case of warm blooded animals the toxicity cannot logically be translated into heart action, since death is with them generally due to failure of respiration.

The toxicity for small warm blooded animals, when injected subcutaneously, is given in Table VI:

TABLE VI.

Animals used.	Crystalline Kombe strophanthin. Lethal dose per gram of animal.	Amorphous acid Kombe strophanthin. Lethal dose per gram of animal.	Standard Tr. K. Strophanthus. Lethal dose per gram of animal.
Guinea-pigs	.0000004 gm.	.0000010 gm.	.00095 cc.
Tame mice.....	.000009 gm.	.000025 gm.	.0005 cc.
Tame rats.....	.00006 gm.	.00005 gm.	.....
Wild rats.....	.000009 gm.	.00008 gm.	.0008 cc.

The guinea-pigs were invariably killed by failure of respiration and the heart was found to be in diastole. The rats and mice generally showed a failure of respiration before the heart action ceased, and the heart stopped in moderate systole.

Crystalline Kombe strophanthin, in aqueous solution, is changed into an amorphous acid strophanthin when boiled. As the toxicity of this amorphous acid strophanthin is only one-third that of the crystalline glucoside, it seemed important to obtain exact figures of this change.

A solution of crystalline Kombe strophanthin in pure water (1 in 2000) was vigorously boiled over a free flame for fifteen minutes, cooled and made up to volume. This tested against the unboiled portion showed a loss of about 15%.

A solution of gratus strophanthin (Ouabain Merck) (1-25,000) in pure water was vigorously boiled over a free flame for fifteen minutes, cooled and made up to volume. This tested against the unboiled portion showed about 10% loss.

As such a change is to be expected in the cold, although, of course, much more slowly, it is important to determine the keeping qualities under different conditions.

A water solution (1 in 2000) of this crystalline Kombe strophanthin was made up and kept in a cork-stoppered flask at room temperature. At the end of two weeks a beautiful growth of mould was present, and an assay showed it to have lost 50 percent of its activity.

Crystalline Kombe strophanthin and Kombe strophanthin (Merck) were then made up (1 to 200) with water containing 4/10% Trikresol and kept at room temperature in sealed containers; no loss appeared with the crystalline glucoside in three months. However, the amorphous preparation of Merck showed a loss of nearly 10 percent within the limits of error.

It was noted that a small amount of alcohol prevented the conversion into the amorphous acid strophanthin, and was taken advantage of in concentrating solutions.

We also found that at room temperature 10 percent alcohol preserves the activity of crystalline Kombe strophanthin.

The marked permanency of the tincture of Strophanthus has long been recognized. It seemed desirable, therefore, to examine this crystalline glucoside from identified Kombe seed in this respect.

Solutions of crystalline Kombe strophanthin (1 in 1000) were made up from time to time with 70% alcohol (and 2 cc. portions sealed in glass containers) and tested on frogs against the old solutions, with the results given in Table VII:

TABLE VII.

Permanency of crystalline Kombe strophanthin in 70% Ethyl Alcohol, kept at room temperature in sealed containers.

Date of Tests	Dose in gm. per gm.	Lived	Died	
March 13 and 15, 1911...	.000,001,0	3	1	
	.000,001,1	2	1	Solutions of June 27, 1910.
	.000,001,2*	0	3	
	.000,001,0	4	0	
	.000,001,1	2	1	Solution freshly made from crystals.
	.000,001,2*	0	3	
October 28	.000,000,70	4	0	
November 2	.000,000,75	6	2	Computed from standard average
	.000,000,80	4	3	tincture.
	.000,000,85*	2	10	
	.000,000,70	2	0	
	.000,000,75	5	2	Solution freshly made from crystals.
	.000,000,80	1	5	
	.000,000,85*	0	4	
1912	.000,000,80	2	0	
July 24	.000,000,85*	0	2	Solution of June 27, 1910.
	.000,000,90	0	2	
July 25.....	.000,000,80	2	0	
	.000,000,85*	0	2	Solution of Sept. 25, 1911.
	.000,000,90	0	2	
July 26	.000,000,80	3	0	
	.000,000,85*	1	2	Solution freshly made up.
	.000,000,90	0	2	
December 20	.000,000,65	3	1	
	.000,000,70*	1	2	Solution of Sept. 25, 1911.
	.000,000,75	0	3	
December 20	.000,000,65	3	0	
	.000,000,70*	0	3	Freshly made up.
	.000,000,75	0	2	
December 27	.000,000,60	2	0	
	.000,000,65	2	2	Solution of June 27, 1910.
	.000,000,70*	0	5	
December 27	.000,000,60	2	0	Solution of December 20, 1912.
	.000,000,65*	1	3	
	.000,000,70	0	3	

The results of over two years show the really remarkable permanency of such a solution.

No systematic study of the heart action was undertaken. However, a few typical tracings showing the action upon the blood pressure and heart of dogs are given. Plate I shows the action of crystalline Kombe strophanthin, and II that of its amorphous acid modification. These are not given with any view to quan-

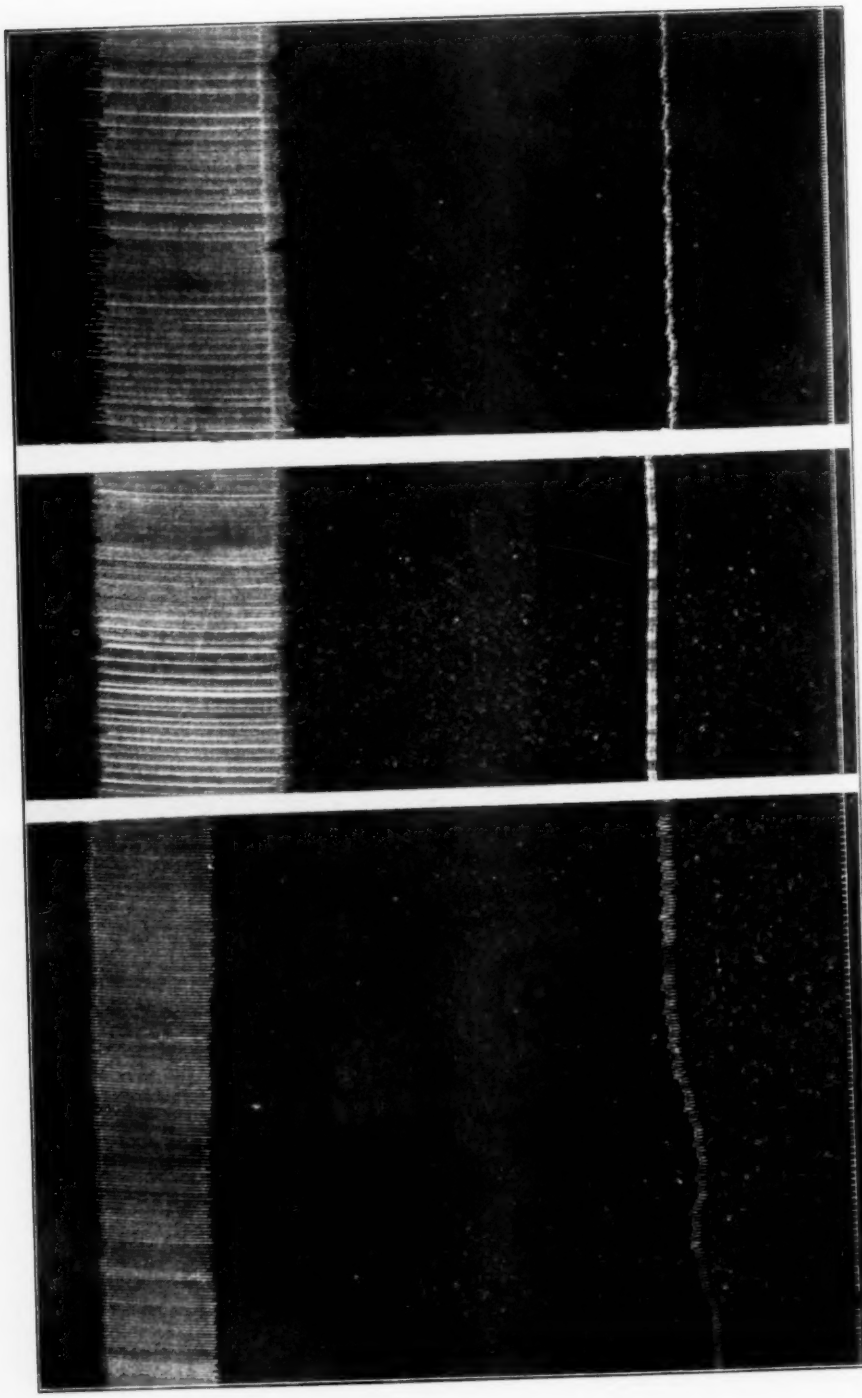

PLATE I.

Plate I shows the effect of the intravenous injection of 0.3 mg. of crystalline Kombe strophanthin on a 12 Kg. dog under chloretone anesthesia and artificial respiration.
Upper tracing is the ventricle beat by direct attachment to the apex and median groove of the heart. Down stroke is systole.
Middle tracing is the carotid blood pressure. Base line time in seconds and signal is at the bottom.
The second portion of the tracing is one-half hour later, and the third portion is one and one-half hour after the injection.

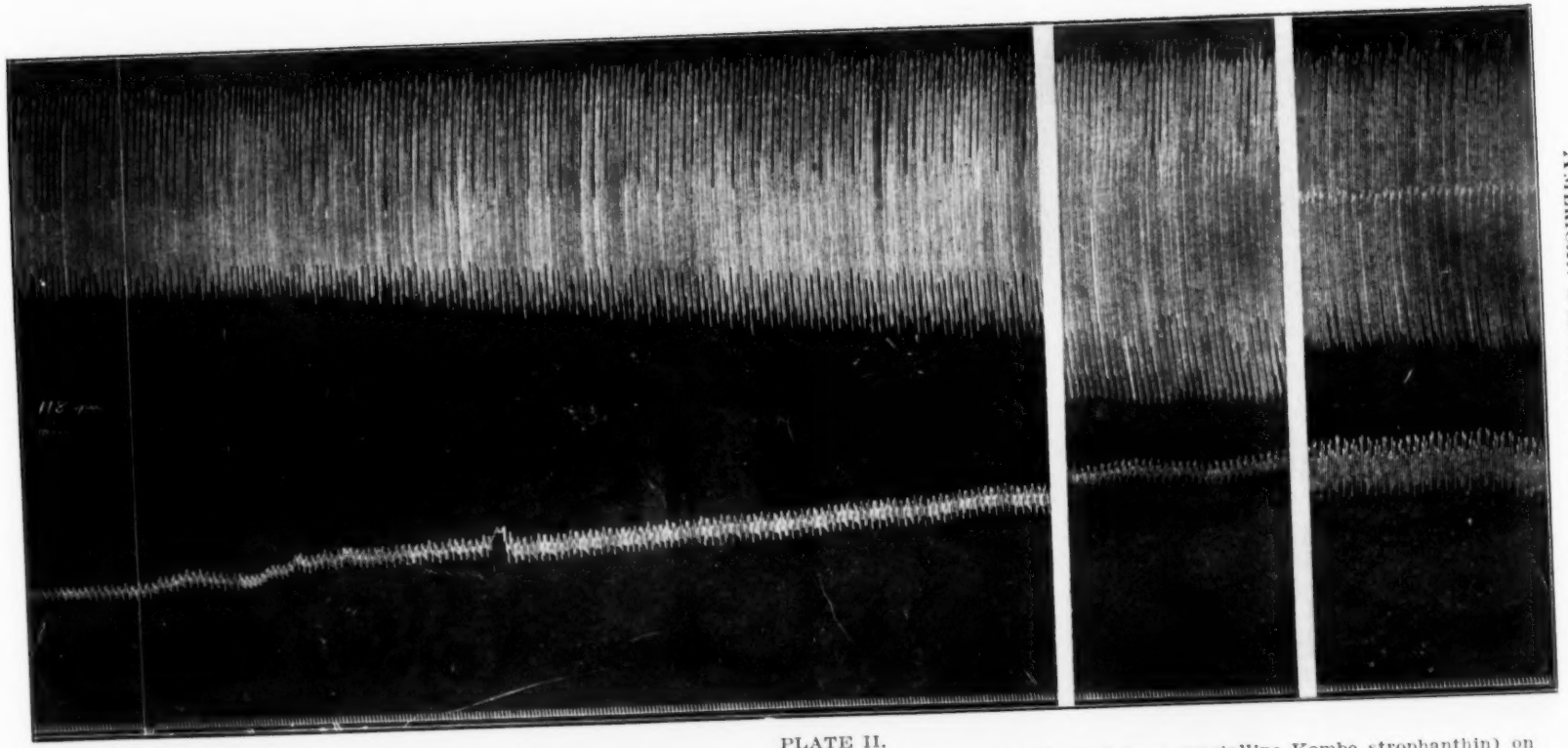

PLATE II.

Plate II shows the effect of the intravenous injection of 1 mg. of amorphous acid strophanthin (derived from crystalline Kombe strophanthin) on a 15 Kg. bitch under chloretone anesthesia and artificial respiration.
Upper tracing is the ventricle beat by direct attachment to the apex and median groove of the heart. Down stroke is systole.
Middle tracing is the carotid blood pressure.
Base line time in seconds and signal is at the bottom.
The second portion of the tracing is one-half hour later and the thirdportion is two and one-half hours after the injection.

titative comparison. Blood pressure effects and changes in heart action in warm-blooded animals give but an uncertain basis for comparing heart tonics on account of the long duration of the action, so that a subsequent injection may show a cumulative effect. Thus the response to a given preparation cannot be compared with that of a standard on the same animal, and on different animals the variation is too large for practical comparison.

Tests in connection with the preparation of crystalline Kombe strophanthin showed that strong alcohol precipitated from the tincture of Srophanthus, salts

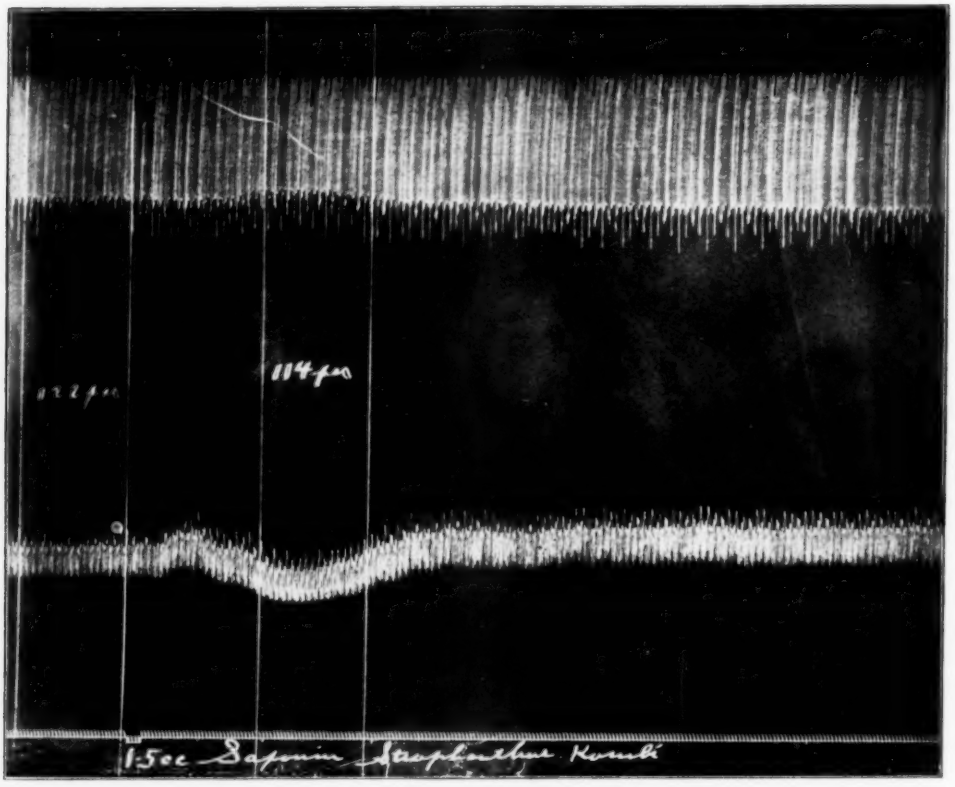

PLATE III.

Plate III shows the effect, on a 13 Kg. dog under chloretone anesthesia and artificial respiration, of the intravenous injection of 1.5 cc. of a solution (1 cc. of which contains 5 mg. of portion precipitated by strong alcohol from tincture of strophanthus and which shows a toxicity to frogs equivalent to .25 mg. per cc. of crystalline Kombe strophanthin.

Upper tracing is ventricle beat by direct attachment to apex and median groove of the heart. Down stroke is systole.

Middle tracing is the carotid blood pressure.

Base line, time in seconds and signal is at the bottom.

and saponin like bodies which carried down some substances very toxic to frogs and which generally produced a fall in blood pressure and weakened heart action. The dried precipitate killed frogs at .00002 gm. per gm., but in purifying by reprecipitation the toxicity and depressure action becomes less and less. A typical tracing of the effect on dogs is seen in Plate III.

The amount is so small in Strophanthus preparations that it is probably of no

therapeutic importance, although in preparations of other drugs[39] it may be of importance. Strophanthidin is 1/10 as toxic to frogs as the cryst. Kombe strophanthin from which it is derived, having an M. L. D. of 0.000009 gm. per gm. of frog when the standard killed at .0000009 gm. per gm. of frog.

The intravenous injection of strophanthidin has some difficulties on account of its slight solubility in water, but by quickly diluting a weak alcoholic solution a sufficiently fine suspension was obtained for injection. The effect upon the blood pressure and heart action is very similar to that of strophanthin.

DISCUSSION OF PHYSIOLOGICAL RESULTS.

In the hands of the authors, the 12-hour frog method of Houghton, Am. Journ. Pharmacy, Oct., 1909, gave the most accurate and reliable results, and for reasons previously stated seems the most logical one to use in standardizing the digitalis series of heart tonics. Equally logical is the method suggested (same reference) for giving tangible expression to the degree of activity of preparations of the series, namely, to use the M. L. D. of cryst. Kombe strophanthin as the basis for comparison; the ratio of the M. L. D. of each member of the series to that of strophanthin, thus determining the activity. Ten times this M. L. D. was chosen as the Heart Tonic Unit (see also Am. Journ. Pharmacy, March, 1912); therefore, the activity of any preparation is the reciprocal of ten times its M. L. D. adjusted to the average for that drug, by comparison with the M. L. D. of the standard (strophanthin). Whatever method is employed, however, it is necessary to compare the activity of an unknown preparation with that of a known or standard. This comparison can be expressed only in terms of a definite amount of the standard, and it is the logical procedure to speak of this quantity as a heart tonic unit (H. T. U.) What amount shall be adopted is unimportant. For our own work we have adopted the standard heart tonic unit (H. T. U.) as 0.00001 gm. of crystalline Kombe strophanthin as suggested above. This is ten times the minimum lethal dose for frogs (Rana Pipiens, 10 to 30 gm.)

The marked stability of alcoholic solutions of crystalline Kombe strophanthin is a very important point in connection with the use of this crystalline glucoside as a standard for determining the activity of galenical preparations, not only of strophanthus seed, but of other heart tonics.

The comparison of the physiological and chemical properties of crystalline and amorphous acid strophanthins shows that the molecular rearrangement brought about by the introduction of one molecule of water has markedly altered the physiological activity.

Other cases are known in which the addition of a molecule of water is accompanied by marked changes in physiological activity, as inactive ergotinin into active ergotoxin.

In the case of the conversion of crystalline Kombe strophanthin to the amorphous acid strophanthin there has been the change of a lactone group into

[39]In the case of ergot one of the bodies thrown down with strong alcohol is beta-imidazolethylamine (Histamine), which in this case is considered one of its therapeutically active principles.

Digitalis and very many other drugs show the presence of bodies with very similar properties and they become of importance when the therapeutically active bodies have poor solubility in water or weak alcohol, since infusions and such extracts may have quite different properties from those expected of the drug.

its acid and alcoholic portions, and accompanying this change a loss of two-thirds its toxicity to frogs.

The character of the blood pressure changes and heart action does not appear to be altered by the opening of one lacton ring formation, only a loss of activity is observed. It must be remarked that the loss of activity as observed with dogs was not as great as indicated by the toxicity tests on frogs and guinea-pigs, and also the toxicity to rats and mice show that the relation one to three is not true in all respects for the crystalline Kombe strophanthin and the amorphous acid Kombe strophanthin.

RESUME.

The seeds of Strophanthus Kombe Oliv. contain two strophanthins; a crystalline glucosid of the formula $C_{40}H_{56}O_{15}+3H_2O$ and a closely related amorphous strophanthin of apparently twice the molecular weight. By the action of water on crystalline Kombe Strophanthin there is formed a monobasic acid strophanthin or a mixture e. g. of a monobasic acid, a dibasic acid and the original crystalline strophanthin. These three strophanthins, crystalline, its acid derivative and amorphous Kombe Strophanthin, when split by dilute acids give strophanthidin of the formula $C_{27}H_{38}O_7+H_2O$. This strophanthidin is identical with the strophanthidin, described by Feist and by Heffter and Sachs.

Crystalline Kombe strophanthin contains neither a pentose nor a methyl pentose (rhamnose). Amorphous Kombe strophanthin apparently contains a pentose. The crystalline Kombe strophanthin prepared by Arnaud is doubtless identical with that prepared by us, but Arnaud was at fault in considering as a hydrate, a new chemical derivative, which we have spoken of as amorphous acid strophanthin.

The results of Kohn and Kulisch show a marked conformity with those of Arnaud and of our own upon amorphous acid strophanthin in everything except the data upon strophanthidin. It seems probable that the method of cleavage and purification accounts for the different strophanthidin.

Crystalline Kombe strophanthin apparently undergoes the following cleavage when heated with dilute acids:

$$C_{40}H_{56}O_{15}+4H_2O=C_{27}H_{38}O_7+C_{12}H_{22}O_{11}+CH_4O$$

Crys. K. strophanthin. strophanthidin disaccharide methyl-alcohol.

Notwithstanding the uncertainty as to the purity of amorphous substances we have shown that a strophanthin different from crystalline Kombe strophanthin is present in identified Kombe seed. Heffter and Sachs have shown that identified hispidus seeds do not contain a crystalline strophanthin, but an amorphous one which is identical or closely related to the amorphous strophanthin from Kombe.

Both crystalline Kombe strophanthin and amorphous acid strophanthin show the typical heart tonic response, diminished rate and increased amplitude of the heart beat, accompanied by a small rise in blood pressure.

The activity of the amorphous acid strophanthin is less than that of the crystalline strophanthin. By the frog method of Houghton, the activity of these strophanthins is in the ratio one to three.

It is very interesting to note that this loss of activitv is associated with the loss of one lacton group.

We believe this crystalline Kombe strophanthin as the definite active constituent contained in Strophanthus Kombe Seed, U. S. P., should be adopted as the standard by which the value of the various preparations of the drug should be measured.

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DRUG PLANT CULTURE IN THE UNITED STATES.*

Within recent years considerable public interest has been manifest in the possible commercial growing of medicinal plants within the boundaries of the United States. This public interest usually expresses itself in the form of inquiries, verbal and in writing, directed to the U. S. Department of Agriculture, State Experiment Stations, Colleges of Agriculture, and to teachers of pharmacognosy in Colleges of Pharmacy, as to how to grow medicinal plants profitably. The more

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purely experimental efforts intended to determine how to grow certain medicinal plants may be arranged under the following heads:

1. Test plantings by the Drug Plant Division of the Bureau of Plant Industry of the U. S. Department of Agriculture, under the direction of Dr. Rodney H. True.
2. Demonstration Gardens of medicinal plants associated with a few of the American Colleges of Pharmacy.
3. Experimental work by a few American pharmacognosists.
4. Exhibition plantings by a few of the wholesale drug houses.
5. Incidental tests carried on in general botanical gardens and in parks.
6. Commercial demonstrations.

With a few exceptions, these several efforts may be summarized as rather trivial and inconsequential in results. The chief reason why not more has been accomplished is a lack of funds to carry out to a satisfactory conclusion the several problems involved. It is true, a number of individuals, realizing possibilities and not willing to wait for scientific proof or demonstration, proceeding on their own initiative, and after many trials, reverses, financial losses, etc., succeeded in establishing the enterprise. Thus we have successful mint farms in New York, in Michigan, in Indiana and in other States; insect flower culture in California; crocus culture in Pennsylvania; lavender culture in California, to say nothing of the extensive culture of garden herbs having medicinal properties. The Division of Drugs of the U. S. Bureau of Plant Industry, under the able management of Dr. True, has done some very efficient work, but a wider range of activity is made impossible through a lack of funds. Experimental work in drug plant culture very properly falls to the U. S. Department of Agriculture and this Department should be granted the funds necessary to carry on such work.

Not only does the United States not furnish funds to carry on commercial experiments, but she furthermore places vegetable drugs on the free list, thus compelling the American citizen who has the enthusiasm and the courage to try out the commercial growing of one or two drug plants, to compete with the foreign market of often a very inferior and even highly adulterated article. We need only mention the Buhach (pyrethrum insect powder) enterprise of California which is compelled to compete with the foreign imports of insect powder made from pyrethrum stems. It is self-evident that under such conditions enthusiasm must soon wane.

It is manifestly unreasonable to expect an individual, or even a large corporation, to invest many thousands of dollars in purely experimental work, the successful outcome of which means a marked gain to the United States, when the United States offers no financial aid or other encouragement. To give another concrete example. At a cost of about $20,000.00 and six years of effort, it has been demonstrated that belladonna of superior quality can be grown successfully in California. The only encouragement and recompense for this sacrifice of money, time and labor, is the permission to compete with the free foreign market of inferior and frequently highly adulterated belladonna. It is furthermore likely that the entire enterprise will have to be abandoned, because of lack of private funds to undertake the growing of belladonna on a scale sufficiently extensive to net any gain whatsoever under the conditions named. A patch of five acres of belladonna is operated at a loss, whereas a patch of 100 to 200 acres could be operated at slight profit.

Manifestly the proper thing for Congress to do would be to fix a tariff of 40 to 60 percent ad valorem on such drugs as could be grown profitably in the United States, with the help that such a tariff would give. It would be a very simple matter to compile a list of drug plants which would come in such a class. It would be foolish to place a tariff on drugs which could not be produced in the United States, nor should a tariff be placed on such drugs which require no protection for successful competition with foreign markets.

It would manifestly be objectionable to place an important tariff on an article of which the adequate home production is in any way doubtful. For example, to fix a tariff of 50 percent ad valorem on belladonna would compel importers to pay out at least $15,000.00 annually for the sake of encouraging the culture of a few acres of belladonna. It is true the protection afforded would, in the course of from five to ten years, result in a yield sufficiently large to supply most of the American market, which amounts to about 150 tons of roots and leaves annually. The revenue increment resulting from such tariff would no doubt be welcomed by the United States, but the payment of the duty would certainly be objected to by the importer and also by the retailer and the consumer. From the standpoint of the importer and consumer the better plan would be for the United States to fix a bounty, let us say of 50 percent ad valorem, or of 5c per pound, on certain home-grown and home-marketed drug plants. Until the article is produced on a large scale, the cost to the Government would be comparatively slight. As soon as the home production reached large proportions, let us say 50 percent of the entire home demand, the bounty could be discontinued and the import duty substituted, and thus in a very short time the Government would be more than recompensed for the financial outlay in bounties for encouraging the enterprise. This method would overcome the hardships to importer and consumer and would, in time, be a source of revenue to the Government while developing a new and most desirable home industry.

In conclusion we give a list of drugs upon which a U. S. Government bounty or an import duty of 50 percent ad valorem should be fixed in order to encourage home production. The bounty should be paid for five years or longer as may be necessary as above suggested.

1. Aconite.
2. Belladonna.
3. Foxglove.
4. Henbane.
5. Licorice.
6. Marjoram.
7. Scopola.
8. Stramonium.
9. Valerian.

These drugs are very important therapeutically and a supply of good quality can be grown in the United States provided some inducement is offered. Marjoram is essentially a spice and the chief reason we have added it to the list is because practically no pure marjoram can be found in the American market.

The matter above outlined is of great importance and should be taken up by Congress at once. The United States pays out some $18,000,000 annually for drugs which should be grown at home.

IS CASTILE SOAP SYNONYMOUS WITH SAPO U. S. P.?*

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This appears to be a very simple question to answer but upon investigation there seem to be conflicting statements in reference to the subject.

I had, recently, occasion to analyze eight samples of castile soap as sold on the market and the results and methods of analyzis have been published in Merck's Report[1], therefore, the analytical discussion will be omitted in this paper. I would state, however, I found only one sample fulfilling the U. S. P. requirements.

I have been interested in having this question settled fairly for both the dealer and manufacturer, as there is likely to be a ruling, for Ohio, in the near future as to the standard for castile soap.

I shall briefly review statements that have been made by writers in journals, also statements found in text books and works of reference, after which I shall give the opinions of a number of soap makers so as to compare the scientific with the practical.

In the January issue of the O. V. D. A. Review, Editor Brittain states: "Castile Soap is a synonym for Sapo or Soap in the nineteenth edition of the U. S. Dispensary. It is the soap of the Pharmacopoeia. There are sold in this market many brands of soap (in long bars or otherwise) purporting to be Castile Soap. A large number of them are mere mongrels, containing animal fats, cocoanut oil, soap bark solution and other ingredients not specified in the U. S. P. formula, which gives the ingredients as Olive Oil and Sodium Hydroxide. Persistence in attempting to meet unfair competition by displaying these brands under signs of Floating Castile Soap, Family Castile Soap, etc., is not at all in keeping with the code of ethics which governs the practice of pharmacy."

Joseph L. Mayer, in a paper[2] read before the Kings County Pharmaceutical Society, states: "Castile soap is official and the authorities recognize the Pharmacopoeia as a standard; therefore, care should be exercised in both buying and selling an article which is true to name and is an olive oil soap."

The U. S. P., second edition, published at Boston in 1828, refers to Castile Soap as it is used in making Soap Cerate, but no mention is made of a standard for Castile Soap. In the U. S. P., 1860, published in 1863, we find "Sapo. Soap. Soap made with soda and olive oil." The 1880 edition of the U. S. P. contains practically the same statement. In the U. S. P., 1890, we find the same statement with the addition in brackets the words "White Castile Soap." This is the first official intimation that Sapo and Castile Soap were to be considered synonymous. In the U. S. P., 1900, or U. S. P. VIII, we find the same definition as in former editions, but the words "White Castile Soap" are omitted, however, as the same ingredients are used in its preparation we should, according to the U. S. P., at least, from inference, consider Sapo and Castile Soap synonymous.

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* Read before the Ohio State Pharmaceutical Association, June 19, 1913.

[1] Merck's Report, April, 1913, issue.

[2] Published in American Druggist, Vol. 51, page 29.

Roscoe and Schorlemmer[3] state under the heading Olive Oil Soap: "This kind of soap, which is usually termed Marseilles Soap or Venetian Soap, was first made from olive oil and soda. Now, however, various other oils are employed."

Bloxam[4] states: "Castile Soap is made from olive oil, which contains oleine and a solid fat known as margarine. The latter appears to be really composed of palmatine and stearine, so that the Castile Soap is a mixture of oleate, palmitate and stearate of sodium."

Cristiani[5] states: "White Castile Soap is now made in almost all countries, and generally with artificial sodas, and even in Marseilles these sodas are now being used. Yet in some factories the barilla is still used as the base; this alkali, containing a certain percentage of potash, gives a plastic consistency to the soap which has added to its popularity. This effect is now usually produced by the addition of a drying oil, such as hempseed, sesame, ground-nut, poppy or cotton-seed oil to the amount of 15 to 25 percent of the olive oil. These oils, instead of being a sophistication, may be considered a benefit, as they prevent the soap, which if made with olive oil alone, becomes too hard on drying, from having that undesirable property."

I sent a communication to fourteen manufacturers of soap requesting their opinion on what they considered pure Castile Soap, and received a reply from ten, one of which did not manufacture Castile Soap and stated they were not authorities on that brand of soap. Following are abstracts from the replies of the other nine:

1. We are pleased to answer your inquiry of the 31st ult., and to advise you that by Castile Soap we mean a soap made wholly from olive oil and saponified with caustic soda.

2. Replying to your inquiry, we would say that it is a physical impossibility to make a hard, salable soap from pure olive oil and sodium hydroxide. This composition would not even make it a sufficiently hard soap that it could be cut into bars.

In this connection, we would say that several years ago, a party came to us and wanted to get a pure olive oil soap for a special purpose and although we explained to him that this could not be done, he insisted that we should try it, no matter what the cost would be. We had in mind that possibly by making a milled soap, this could be accomplished. Milled soap, as you probably know, is made by a process whereby the finished soap is cut in chips; then moisture dried out until the soap contains about 10 percent; then by milling and plodding, it is again made into a compact mass. But even with this small amount of moisture, the soap was too soft to be merchantable and we had to use harder fats in connection with olive oil (in this instance tallow) to make it a salable soap, of which fact we informed him.

While in the index of the United States Pharmacopoeia, white castile soap is indicated as being synonymous with sapo, yet all castile soaps, whether they are imported or domestic, contain some other hard fats besides olive oil, usually

[3] Roscoe & Schorlemmer Chemistry, Vol. III, pare 1, page 692.
[4] Bloxam's Chemistry, page 578.
[5] Cristiani Technology of Soap, page 274.

one-half olive oil and one half other vegetable oil, such as cocoanut oil or palm kernel oil, and we would not consider them as adulterated.

As to the alkali used, the sodium hydroxide is the only one practicable alkali that could be used, as the potassium hydroxide, the only other alkali that could be used, would produce a liquid or semi-liquid soap.

3. The word "Castile" has been applied more to the method of making soap than the ingredients, in the commercial world in the United States, and this existed many years before our entry into the soap business. A Castile soap is supposed to come from Castile, Spain, which was a soap made with olive oil and soda, but the name "Castile," in U. S. A., has been applied for many years to soaps made from other oils, becoming a very common name on soaps. For instance, there is made the Cocoa Castile, which is made entirely from pure cocoanut oil. It contains no olive oil whatever, but could not be considered an adulterant, as it is a more costly oil than the olive oil used in the manufacture of soaps. There is likely more Cocoa Castile Soap sold today than olive oil. It is customary now when getting out an olive oil Castile to make it "Olive Castile," or "Made from pure olive oil."

Scientifically speaking, a Castile soap should be made from pure olive oil, but its uses in the United States have been long connected with other soaps, and very often very cheap grades of soaps to deceive the public.

4. Replying to your letter of the 31st ult., would say that, in our opinion, a genuine Castile soap is a soap made only from pure olive oil and sodium hydroxide.

5. If a Castile soap is marked Sapo U. S. P., we would then consider it synonymous. Otherwise not. The addition of other oils is not an adulteration, due to the fact that they give better lathering quality, although the soap will not be as soft. Of course, if any soap manufacturer adds such things as starch, mineral oils and so on, we would consider them distinctly adulterations.

Nearly all of the Castile soaps made in this country are not made simply out of olive oil and sodium hydroxide, but are made out of a large proportion of tallow, and the word Castile means to the soap trade, as far as we can understand it, simply that there is olive oil in the soap.

6. The writer has always been under the impression that Castile was simply a name, originating from the Spanish word, Castile, or Castilia, an old province in Spain, where it was first discovered that soap could be made from vegetable oils; olive oil being the only material in that country in ancient times.

It has only been a matter of recent years that cocoanut oil has been generally used in soaps, and taking into comparison the cost price of both materials, we hardly see where the argument can be substantiated that cocoanut oil soap with Castile as part of its name is an adulteration.

7. We do consider Castile soap synonymous with Sapo of the United States Pharmacopoeia only when it is stamped pure olive oil castile. There are a number of soaps made under the castile process on the market and are manufactured from a combination of vegetable oils, and some contain small quantities of tallow. These are also considered pure castile, but not pure olive oil castile. We might mention that there are a large number of soaps on the market called Cocoanut Castile, which are also pure.

8. The Castile soap ordinarily found in the trade is not Castile soap according to the United States Pharmacopoeia. Castile soap, of course, derived its name from the fact that it was made from olive oil in Castalia Province, Spain, and later was specified by U. S. P. as a soap made from pure olive oil and sodium hydroxide. The term "Castile" has now come to apply to almost any soap that has a high percentage of cocoanut or olive oil, and that is intended for toilet purposes.

9. Castile soap was originally undoubtedly made by boiling and graining a soap from olive oil and natural alkali, i. e., a mixture of sodium and potassium hydroxides, containing as impurities salts of iron and manganese to which latter was due the mottled or marbled appearance which was characteristic of Castile soap made in the old days.

Today we would consider as genuine Castile, a boiled and grained soap made from olive oil straight or mixed with peanut oil, or sesame oil, or both, using with the sodium hydroxide enough potassium hydroxide to give the degree of translucency and plasticity which a soap of this class should possess, and if a marbled or mottled article was desired, we would have to use with the present day alkalies the chemicals necessary to produce such effect.

Castile soap should be practically neutral, that is, it should contain but traces of free alkali in the form of either caustic or carbonate of soda, and quite free from other soluble or insoluble inert matter of any kind, the sodium chloride content should be only such as is incidental to the boiling and graining process cited above.

In respect to the United States Pharmacopoeia data under the heading "Sapo" advise that in our opinion such providing for a limit of either 4 percent free carbonate of soda or 3 percent carbonate or soda and 1 percent silica or other foreign matter, we would certainly not as soapmakers consider as pure a prdouct containing such an amount of matter other than soap and water.

In conclusion, I wish to state that after duly weighing all the evidence, it is perfectly proper to decide that Castile Soap is properly a synonymon for Sapo U. S. P., and that a ruling to that effect is desirable.

ANALYSING MEDICINES.*

DR. J. J. DOBBIE, F.R.S.

The detection of any substance by chemical analysis depends, ultimately, upon obtaining it or some of its combinations or derivatives in a condition recognizable by some characteristic property: for example, form, color, smell, taste, melting-point, boiling-point, solubility, miscibility, or alteration in color or other charactertistic when brought in contact with chemical reagents. The detection of the presence of a substance depends ultimately on the senses of sight, smell, taste, and touch.

*Abstract of a statement made before the Select Parliamentary Committee on Patent Medicines, by Dr. J. J. Dobbie, F. R. S., Principal of the Government Laboratories. Reprinted from the *Chemist and Druggist*, London.

There is no essential difference in principle between the method of detecting a substance by ordinary analysis and those of the expert who judges chiefly by smell and taste. The expert might, of course, claim to have special experience in dealing with particular products, and that in some cases might be useful.

Some times a single observation or reaction is decisive, as, for example, in the case of the yellow color imparted by sodium and its compounds to the flame of a Bunsen burner or spirit lamp. In other cases a combination or association of more than one property might be necessary for the proof. Two bodies, for example, might have nearly the same melting-points, such as acetanilid, 113° C., and antipyrine, 114° C., or might produce a similar color when treated with the same reagents. In such cases, for instance, one other reaction is necessary to distinguish between the two bodies.

Inorganic Substances. With inorganic substances it is generally easy to obtain a combination of reactions, and the reactions themselves are often sharp and decisive, whereas in the case of many organic bodies it is in practice more difficult to obtain conclusive single tests of a sufficient quantity for corroborative reaction. For example, the quantity of essential oil obtained in the ordinary analysis of medicines is often so small that it is impracticable to determine its physical and chemical constants, such as specific gravity, boiling point, polarization, and so on, and the odor alone has often to be relied upon.

Where it is a question of a single drug, either as a solid or in solution, there will be usually no great difficulty in identifying the drug, provided that it is one of the official drugs or one whose properties have been described in the ordinary chemical or pharmacological literature. For example, no difficulty would arise with regard to inorganic substances, such as salts of bismuth, mercury, zinc, bromides, iodides, alkalies, acids, and so on.

Organic Substances. Organic substances of definite composition, either prepared synthetically or extracted from plants, such as acetanilid, salicylic and other acids, and alkaloids; plants or parts of plants, whole or powdered, such as roots, barks, seeds, leaves, and flowers, as, for example, belladonna-leaves, chamomile-flowers, fenugreek-seeds, cascara-bark, and liquorice root offer no special difficulties. Taking the whole range of medicinal substances, in respect to the great majority, there would be no special difficulty in identifying the drug in question with certainty, when the analyst is dealing with single articles the properties of which have been adequately studied and described.

Vegetable Extracts. When, however, the drug is a new one, or one which has no known characteristic chemical or physical property, its definite recognition may be difficult or impossible. To the latter group belong extracts obtained by maceration of the plant with alcohol or other solvent. The extract might only contain substances which are common to several plants, and nothing which is characteristic of any one, and it would then be impossible to identify positively by chemical means. When it is a question of a mixture of drugs, the analysis becomes more complicated. In many cases the constituents of a mixture can be detected directly and readily where they have characteristic properties. But in

other cases it might be necessary to separate certain constituents from others which would interfere with the recognition of those characteristic properties. The more complex the mixture is the more difficult as a whole would be the separation. Also, the difficulty is increased when one or more of the constituents are present in very small quantities relatively to the others or, again, when a large proportion of vegetable extract is present which is without definite features. Further, in the case of vegetable substances, the difficulty is greater than with mineral bodies on account, first, of the fact that many substances which are really distinct chemical individuals resemble one another so closely in properties as to make their discrimination a matter of difficulty; and, second, of the greater susceptibility to change under the influence of the reagents used—heat, alkalies, and so on.

Speaking generally, it is quite practicable for chemical analysis, supplemented, of course, by the microscope and the senses of smell and taste where necessary, to deal with most of the mixtures of drugs which are prescribed in ordinary medicines. But when a number of drugs are mixed together the difficulty of analysis increases with the complexity of the mixture, and in certain cases the difficulties eventually become so great that the complete analysis of the mixture becomes impracticable. Even in such cases, however, bodies with certain well-marked chemical or physical characters, and these are possessed by most medicines, can be separated from the mixture and identified. For example, all inorganic bodies can be separated from organic constituents, volatile organic substances from those which are non-volaile, alkaloids from non-alkaloids, resins from non-resins.

When the medicine consists of a mixture of several vegetable extracts which have not so far been found to have any well-defined chemical characteristics, and which are present only in small proportion, analysis may fail to show what the original extracts are; that is, from what plants the original extracts were derived. It would show the presence of sugars, tannins, acids, coloring matters, and so on; but as these might be derived from any one of a number of plants, they do not indicate the precise extracts used, and analysis must perforce remain satisfied with ascertaining the general characters of the mixture.

The degree of accuracy of quantitative determinations depends very much upon the substance which is being dealt with, as well as upon the nature of the other bodies with which it may be mixed. Broadly, it may be said that the proportion of mineral drugs can be determined with no substantial error. For example, calomel, bismuth nitrate, Epsom salt, and zinc oxide are capable of being quite accurately estimated. Organic bodies, however, present a much wider range of variation; while some can be determined accurately, approximations only are possible in other substances. For example, the proportion of a bitter extract, such as gentian, in a mixture can often be determined only by a comparison with other mixtures made up with different proportions of gentian to match the taste of the first mixture. This may give but a rough approximation to the actual quantity of gentian extract; or, again, the proportion of an organic drug might be sometimes arrived at by determining the amount of one of its components—for example, the amount of alkaloid; but the natural varia-

tion in the amount of the component itself may render the determination of the drug only an approximate one.

So far as a general opinion can be given, it would be safe to say that where the presence of an active organic drug in a mixture had been definitely ascertained, in the majority of cases the analyst can, by one means or another, obtain a fair idea of its proportions, although sometimes he must be content with a rough approximation only.

THE DRUG MARKET.*

HARRY B. FRENCH, PHILADELPHIA.

Benzoic Acid. The first Democratic Tariff Bill proposed a duty on benzoic acid and the reduction of the duty on benzoate of sodium and the measure, as will be recollected, passed the House. If it had become a law, it would have had the result of taxing American manufacturers about 1c per lb. for the privilege of making benzoate of sodium. In other words, if both articles had been admitted free of duty, the American manufacturers would have been better off to the extent of 1c per lb. on benzoate of sodium than they would be under the proposed legislation. While this has been changed in the bill at present before Congress, it shows how injurious may be the mistakes that arise from ignorance or lack of due consideration.

Borax. The present duty on borax is 2c per lb. Under the proposed law the duty will be reduced to ⅛c per lb. In the face of this borax has been advanced in price. There are those who think that the effect of the removal or the reduction of duties from many articles will not only not reduce the price to American consumers, but may advance the price, because of a world-understanding.

Citric Acid and Oil of Lemon. Citric acid and oil of lemon have been extraordinarily high for the last few months. Oil of lemon is now selling at higher prices than ruled immediately after the earthquake at Messina. Citric acid has been selling in this country at a lower price than in England, although there is a duty of 7c per lb. Therefore, the present price is firmly maintained, notwithstanding the fact that in the new tariff bill the duty will be reduced to 5c per lb.

Opium. It has been thought generally throughout the country that opium and its products would be largely advanced in price, because of the proposed increase of duty. The present duty on crude opium is $1.50 per lb. The proposed duty is $3.00 per lb. The present duty on morphine is $1.50 per oz.; the proposed duty is $3,00 per oz. The present duty on codeine is $1.50 per oz.; the proposed duty is $3.00 per oz. The present duty on powdered, granulated, or dried opium is $2.00 per lb.; the proposed duty is $4.00 per lb.

Under ordinary circumstances, there is no doubt that this expectation would come true. It must be remembered, however, that during the last two or three years, Smyrna opium has sold at exceptionally high prices. The prospects for

*Abstract from report of Committee on Trade Interests, R. H. Lachey, Chairman. Presented to Pennsylvania Pharmaceutical Association, June, 1913.

the present crop to be gathered in this summer are, at this time, exceptionally good, and it looks to us as if the price of opium in Smyrna would decline, at least as much as the advance in the duty. It is probable that very little additional opium will be bought in Smyrna or in London from now on for the reason that it is possible it might not arrive here in time to be entered at the present rate of duty. Therefore, under these circumstances, there might be no opium purchased for importation into this country for a couple of months. This might have some influence in advancing the price here and depressing the price in Smyrna.

Furthermore, the dealers in Smyrna will probably be able to obtain advances from the banks, owing to the close of the war, and will undoubtedly be reluctant sellers at low prices, as they will bear in mind the high prices obtained for several years past, which may postpone a decline at that port.

Our opinion is that opium and its products will not decline because of the proposed increase in the duties, but that much higher prices should not be expected, except the new crop be injured in some way.

Menthol. Menthol at this time occupies rather an anomalous position. The present duty is 25 percent, which, on the prices paid by most dealers, makes the cost about $8.00 per lb. The proposed duty is 50c per lb. net. At the same time, the price in Japan has declined and is still further declining, owing to the large amount produced during this year and the prospect of a large new crop. The consequence is that dealers are selling stock on hand for from $1.00 to $1.50 less than cost. If the new tariff bill should not go into effect until September, we might see some high prices before that time, as spot stocks might become exhausted.

Asafetida. Asafetida has very largely declined in price during the past year. In fact, the cost has been decreased nearly one-half. The high-priced gum that has been sent into this market is soft and many buyers have objected to it on that account. The solubility test is very high, in some cases going up as high as 75 percent. The Government, however, has claimed that this solubility test is due to adulteration; that other gums are added to the asafetida in order to raise the percentage of solubility. In addition to the solubility and ash test, the Government has recently adopted a new standard, known as the "lead number," requiring the gum to show approximately a "lead number of 200," claiming this to be conclusive evidence of the absence of adulterations, such as galbanum and ammoniac. These two gums when added increase the solubility, but lower the lead number. The lead number test, however, is considered unreliable by a number of eminent chemists in England and America. (See "The Lead Number of Asafetida," Chemist & Druggist, May 24, 1913, p. 22.)

The whole matter is still in doubt. It is possible that the Government is right in its contention, but it is very questionable. In the meantime, importers experience great difficulty in importing this article.

During the warm months, there is also great trouble in obtaining powdered asafetida. There is no test for powdered asafetida in the Pharmacopœia (VIII), and the test required for the whole gum is arbitrarily applied to the powdered, and that powdered which answers the test for the whole gum is called "U. S. P." The requirements of the whole gum are that it shall test not less than 50 percent solubility and contain not over 15 percent of ash. We believe that in the next

issue of the Pharmacopoeia the ash content for the powdered gum will be made greater, as in powdering the gum the ash content is necessarily increased. The powdering of this gum is very difficult and we have been practically forced to powder it with magnesium carbonate. We had several thousand pounds powdered without magnesium carbonate, but in warm weather such a powder becomes lumpy and viscous, and we have had to have a large portion of it powdered over with magnesium carbonate. By great care, we have obtained a quantity of this re-powdered product that answered the requirements of the Pharmacopoeia for the whole gum. When powdered without magnesium carbonate the test ran up as high as 65 per cent solubility and only contained 10 to 13 percent of ash. When, however, it was re-powdered with magnesium carbonate, it tested only about 52 percent solubility and nearly 15 percent ash. In many cases it contained nearly 25 percent of ash. As a matter of fact, the ash content is of no importance, so long as the solubility test is of the proper standard.

Papain. Papain is now largely used in manufacturing tablets and is another interesting article. We imported a considerable quantity of papain and on examination found that it contained about 45 percent of starch. As there should be very little starch in precipitated papain, the starch was manifestly added as an adulterant. At the same time, we have not been able to find any papain that was not adulterated with starch, and we, therefore, sell this papain with the starch content marked on the label and also state the fact in our quotations. It is possible now that we have published the fact of this adulteration, that dealers abroad may conclude that they can get a proportionately higher price for pure papain, and will gradually, if not immediately, discontinue this injurious practice.

Copaiba. Uncleaned copaiba of the true South American variety, as sold in this country by the receivers in large drums, based upon LaPinnes' test, has been constantly advancing during the last few months. The new tariff proposes a duty of 10 percent ad valorem. The market value by the can of the genuine article is 55c per lb. The Hamburg variety can be still bought at 45c per lb. The attention of the Government has been called to this Hamburg variety, but they either have not given the matter attention, or have been unable to prevent the importation, for the reason that the product answers the requirements of the U. S. P.

Balsam of Fir. Canada balsam, which is official, has been unobtainable for some months of this year and has sold as high as $14 per gallon. There is a variety of Oregon balsam obtainable, that is apparently equal and similar in appearance to Canada balsam, and cannot be told apart from it without testing. A great many people have thought that Oregon balsam was an artificial product, but this is not the case. It dries more slowly than Canada balsam and does not respond to the magnesium oxide test. It is to be hoped that in the new Pharmacopoeia it will be found advisable to make Oregon balsam of fir official. In the meantime, doubtless, many people are paying the price of Canada balsam and are receiving the Oregon product.

Balsam Peru. The Government seems to have been successful in refusing

admittance into this country of Hamburg balsam Peru and possibly, in a short time, only the genuine article imported from San Salvador will be obtainable.

Hyoscyamus Leaves. Whenever a crude drug is imported that tests less than required by the Pharmacopoeia, the Government can make such conditions as they desire. They may refuse admittance of the drug or they may permit its entry and use on such conditions as they think would protect the public. Henbane leaves is a startling example. The Pharmacopœial requirement is 0.08% mydriatic alkaloids. This is higher than can be commercially procured, at least so far as our experience goes. We have obtained samples of various offerings of henbane leaves that were quoted as U. S. P. quality and in every case we found that the test was far below the requirement of the Pharmacopoeia. We are not able to import henbane of U. S. P. strength except for manufacturing purposes, since the government has refused to permit us to take delivery excepting we give an affidavit to the effect that we will not resell any of this drug or use it except to parties by whom the product would be standardized. By this ruling, we were prohibited from filling any orders from retail druggists. We do not think the enforcement of this rule is justifiable, for the reason that U. S. P. henbane is not obtainable, but, worse than all, the Government has, in spite of repeated remonstrance, failed to enforce the rule at all the ports. Consequently, we import the henbane leaves for manufacturing purposes, and buy the leaves in New York City for selling to the retail drug trade, and this, notwithstanding that the leaves we import are, as a rule, of better quality than the leaves purchased by us in New York City.

Angostura Tonka Bean. The great consumer of Angostura tonka beans is the tobacco trade. The normal price is about $1.00 per lb. Last year, owing to short production of several years, the price ran up to over $6.00 per lb. We are not well informed on this article, but we understand that competition is caused by the respective price of rubber and other articles grown in the same countries. If, for instance, the demand for rubber is very great and the price high, labor is concentrated in producing rubber and the other articles, such as Carthagena and Rio ipecac root and Angostura beans, are advanced in price because of lack of labor. If rubber declines, it is to be presumed that there will be a corresponding reduction in the price of the other articles. The price for the balance of this year will be very much lower, as the beans were offered in quantity at less than $1.00 a short time ago. Recently, the price has been higher.

Cannabis Indica. The Pharmopoeia specifies that the female tops of the East India or Bombay cannabis indica be used. A very high tax is levied on every pound of the drug grown in India by the British Government, for the reason that it is used by the natives and is thought to be injurious. The product is being cultivated in America and, while not official, it is being used medicinally. Reliable pharmaceutical houses specify fluidextract made from the Amercan product. There are several other varieties of the drug and large quantities are imported from Madagascar, but our experience would indicate that none of these other varieties has great value. The American product, however, possesses considerable value, and it is possible that it may be recognized as official in the new Pharmacopoeia. In the meantime, of course, no dealer has any right, legally or

morally, to supply a product from cannabis indica, except from the Bombay variety, without so specifying on the label.

Ergot. Ergot has ruled very high in price for some time past, owing to the short crop. We have been successful each year in obtaining a reasonable supply for our own manufacturing of the new crop of Spanish ergot, which has been proven by physiological test to be of excellent quality. The early part of the present spring, however, we had occasion to buy a few thousand pounds of Russian ergot. We obtained a well-known brand, thinking that in this way we would secure better quality. The physiological examination, however, showed that this ergot was inert. The writer has been informed that while Russian ergot is smaller than Spanish ergot, there is no intrinsic reason why Russian ergot should not be as active as the Spanish drug, and we cannot explain why these various lots proved to be inert.

Guarana. Guarana is a product of Brazil and is largely used in that country in the form of tea. Years ago, this article has sold as low as 20c to 30c per lb. In recent years, it has averaged a price of from $1.25 up. The new crop is generally offered about June. Up to this time, the offerings have been very small and the lowest reliable quotation that we have heard was $3.00 per lb. Unless conditions change, very high prices will prevail.

Barbadoes Aloes. There are many who argue that true Barbadoes aloes is not obtainable, but they are mistaken. There is a moderate quantity imported into this country regularly every year.

SMITH, KLINE & FRENCH CO., June 2, 1913.

CHINESE PHARMACY.

J. F. RUPERT, HOSPITAL STEWARD, U. S. NAVY, ANNAPOLIS, MD.

There may be said to be two classes of drug stores in China, the strictly native shop, and the other invaded by the ideas of foreigners. Indeed, this division marks boundaries in all conditions in China. The strictly native shop would never be suspected of being a drug store by any one not acquainted with such places. However, after a short residence in China, to the interested, it becomes an easy matter to pick out the drug vendors as one passes in a rickshaw.

The native shops sell no liquids. No bottles are in evidence. No sign of the existence of foreigners is visible any place about the premises. Nicely lithographed cans are arranged neatly on the shelves with Chinese labels. Very many drugs are kept in wooden drawers, arranged exactly like the herb drawers of their more enlightened brethren in the States. Powders are kept in cans and jars. Chemicals do not enter very largely into their stock, which consists for the most part of vegetable and animal drugs. Their "back rooms" are well stocked with herbs in bundles, and flowers and seeds in bags.

In China all strictly native business houses open on the street without windows or doors. At night the entire front is closed with boards. This is also the prac-

tice during stormy weather. Curtains of reeds or grass give shade from the fierce sun. The Chinese have many native practitioners, whose business is a mixture of quackery, conjury and empirical experience. Most of the people, especially the poor, essay to cure their own ills, assisted by the advice of friends and the aid of the drug dealer, who is shrewd enough to miss no opportunity to sell a few coppers' worth of some of his cures.

The drug men are very adept in putting up packages. These packages are not secured with a cord unless quite large, when the package will be carried by the cord ends which are left long for this purpose. The small packages are made by placing the article to be wrapped in the center of small square pieces of paper, kept ready for this work, the lower corner is first folded over, then the side corners, and lastly the top corner is folded down and tucked in, making a very neat and secure package.

Their drugs are mostly of an aromatic and demulcent nature, and while they thoroughly understand the practical use of many vegetable drugs, others are used in ignorance and superstition. Active drugs containing powerful principles are not much used, as they are fearful of their effects. Poppy seed, ginger, anise, fennel, orange and lemon peel, marshmallow, elm bark, cinnamon, cloves and other spices, are common drugs to be recognized. Ginseng root is, of course, the standard Chinese remedy, and, because of its price, is used mainly in the treatment of disease in its last stages. The consumptive, about to cash in, will be allowed the great luxury of ginseng if the price is available. Great attention is given to the cultivation of this drug and a product of greatly varying value is found upon the market. I am told the very best comes from Korea, that is, they consider that this is the best.

The Chinese names for drugs vary in the different provinces and have no relation to English equivalent names. This fact makes it hard for Chinese qualified physicians to use native herbs and, of course, the natives usually cannot furnish drugs asked for by foreign educated doctors, for the reason that they have been taught a manufactured vocabulary for names for drugs and medical terms for which the Chinese contains no equivalents.

Chinese pharmacy has its zoological side also. The number of insects and reptiles that can be produced from among the array of cans, jars and drawers is certainly wonderful. Dried toads, snakes, locusts, beetles, centipedes, flies and bugs of all descriptions can be had.

These are often smoked, usually dried, but some have the appearance of having been put up in grease or syrup. These animal products are more expensive than the vegetable drugs, and in their use I would judge that superstition plays a greater part than in the use of the more common medicines.

Pills are in evidence in large quantities and have a ready sale.

The scales used are an unequal-arm, single-beam, hand affair, with sliding weight. These are carried about the place as is most convenient in weighing. The Chinese unit of weight is slightly heavier than our pound—four of their units equal five of our pounds.

As to the prices charged, I can give little information, as they will charge a foreigner all they can, and it is only after having gained their confidence that they will allow one to examine their stocks or give any information. I would

judge that they do a considerable business, as the Chinese like to take medicine, and the shops constantly have customers about. Some have large buildings and large rooms and employ as many as 10 to 15 or more assistants. China is full of disease, and the habit of living in crowded little hovels, with ventilation most carefully guarded against, and a constitutional dread of water, unites to incubate and spread disease wholesale.

In China a great amount of business is done in coppers and cash. A copper is about the size of our half-dollars and is worth less than 1-3 cent gold. A cash is worth about 1-30th of a cent gold. Cash are used by the very poor and will buy comparatively as much as a cent in the States. Coppers are universally trusted as their size and actual value in copper prevents counterfeiting.

The native drug seller has some dignity about him and greatly resents foreigners trying to satisfy their curiosity by prying into his business.

A Chinese pharmacist would pass a poor examination in chemistry, but could show us clubs and spades about vegetable drugs. He must be able to identify all his herbs; must know their uses and properties; must know what time of the year to collect them, and how to cure and preserve his stock, and must understand their cultivation and the different species. The farmers and native collectors raise and gather the plants and they are for the most part ready for sale when put upon the market. The roots are all sliced and have the appearance of having been cut when green and fresh.

The other class of stores, very likely, will have glass windows and a door and glass show cases. These stores are often owned and conducted by educated Chinese physicians, who do a good business, really converting the place into a dispensary, where the people may come, relate their symptoms and receive treatment. These stores, of course, have stocks of foreign appliances and chemicals, and in many respects have the appearance of some of our stores at home. In fact, in Shanghai and other large cities, some Chinese stores employ a number of foreign pharmacists and are really up-to-date, first-class pharmacies.

It is surprising how many Chinese can speak English, even in the heart of the native cities, where foreigners rarely enter, and then only with a guide. Education is honeycombing Chinese superstition and ignorance, and 50 years more will see China a modern country for the greater part.

A number of patent medicine firms from the States, and especially a Japanese company, are flooding China with patents. Many patent medicines bearing not a word of English are seen upon the shelves, while their advertisements are seen in the papers and upon walls and most any place where they will be noticed. Some of them even have advertisements on the front of street cars passing through the Chinese districts in the large cities. In fact, the Chinese are an ideal people to whom to sell drugs.

A medicine well colored and pleasantly flavored is really relished and finds a most ready sale. The consumptive, of whom China has thousands, will buy a bottle of some quack medicine and shut himself up in some hovel and we can hardly wonder that he soon succumbs. Just now, while the Chinese government is doing its utmost to suppress the use of opium, many unscrupulous are pushing opium cures, both liquid and pills, which contain morphine, and are doing a thriving business. The Chinese themselves attempt this patent medicine stuff,

but the greater part of the nefarious business must be laid at the feet of foreigners, mostly Japanese, and some Americans.

In these stores we find soaps, perfumes, some stationery, combs, brushes, cigarette cases, patent medicines, cuttlery, leather goods, and, in fact, a little of everything.

In some stores, not strictly first class, are to be seen powdered drugs and pills in almost any kind of container imaginable. Liquid shoe polish bottles, cigarette tins, beer bottles, whiskey bottles with screw tops, patent medicine bottles, pickle bottles are all pressed into service. Perhaps they place some confidence in the lithographed label.

Many of these drug stores also attempt a little in the line of dentistry. This consists mostly of extractions with modern forceps, silver fillings and gold crown. With the least instruction from some one who has a reputation as a dentist, some of the natives develop into really clever workmen. China has a number of men who are graduates in dentistry from schools in the States and Europe and these do a large business and also conduct schools, often going to neighboring towns for the purpose. The course of instruction is rather short, but the students seem to absorb a great amount of practical knowledge during this time, and are able to do a great amount of good among their country-men who happen to have the necessary cash.

Gold is considered a poison of especial potency. It is often resorted to with suicidal intent, probably because they know its deathly properties are more in reputation than in reality.

Phenol and other caustics are taken by some who really mean business in the serious matter of giving up the ghost. Nitric acid also seems to be favored in this regard.

There are a number of Chinese works on Materia Medica. The old writers did considerable work in this line, but many of their works have been lost or cannot now be read.

Ointments are very popular with the Chinese. Pills and tablets are frequent. Blisters and poultices are well understood. A colorless and tasteless preparation is despised and held in contempt. Decoctions and infusions, however, constitute the backbone of Chinese medicine.

COOPERATION, THE LIFE OF TRADES AND PROFESSIONS.*

E. G. EBERLY.

Unquestionably, to come as far as I have in response to your kind invitation, would indicate that I was competent to deliver a message, or at least speak to you interestingly. The topic which has been chosen presents another proposition that would here call for excuses on my part were I given to such methods for getting myself out of trouble, but my way of doing under such circumstances is

* An address delivered to the Nebraska Pharmaceutical Association, June, 1913.

to do the best according to my ability and rely on the considerate judgment of my friends.

"No small profit that man earns—
Who through all he meets can steer him,
Can reject what cannot clear him
Cling to what can truly cheer him."

The subject of my address was selected prior to the misfortune that befell a portion of your state and which gave you an opportunity to show what stuff your citizens are made of. No sooner had the news stirred the sympathies of the good people in other states and enlisted their desire to aid you when the wires conveyed the information that Nebraskans were grateful for the expression of sympathy but perfectly able to take care of the situation themselves. Fortunate on the one hand, but how much satisfaction this must have been to you, and if possible the estimate of others was enhanced because of your strength and fortitude. So this is why I have made the statement that my topic becomes more difficult to handle because of your familiarity with practical co-operation. If the opportunity did not offer for discussion from many viewpoints I would indeed hesitate, and I may, therefore, speak of things that you accept as a matter of course, or you may differ with some of my interpretations. My subject is as comprehensive as it is important, but precludes the possibility of a thorough discussion on account of covering too much territory.

My objective in discussing the first portion of the topic will be an endeavor to point out the contribution of the merchant classes to civilization, and to deduce therefrom arguments which should appeal for their proper encouragement and promotion of regulations for the benefit of the greatest number. I am aware that in order to do this rightly, will require the narration of considerable history which would not be expected in this dissertation, and I will not attempt to do so except perhaps to the extent which will advance one of my purposes, namely, to show that certain means of distribution do not upbuild nor conduce to the greatest general prosperity.

We have as neighbor a sister republic with natural resources relatively not inferior to our own country, and with a history antedating that of ours. Without going into an analysis of the contributory causes, it can readily be asserted, in order to make the example fit our subject, that in the one instance we have exemplified cooperation; in the other, usurpation of power, self-aggrandizement and disregard of the majority predominate. We may make the further declaration that, while out of revolution stability may come, its continuance is a serious impediment to progress.

In all ages the overwhelming majority have been compelled to give their time and energy to the pursuit of material things, needful for subsistence and culture; and when the majority were given fair consideration according to their participation, then there was progress. When, however, the condition of ruler and serf obtains, whether by the force of arms or by money power, when to do unto others according to the best interest of the greatest number is transposed so that a few reap the benefits at the expense or detriment of the many, there is impediment, no matter what conditions may seemingly be.

The development of trades is an interesting study, and the divisions of time from earliest history to the present can readily be recognized as most progressive during which the opportunities for exchange of commodities were most propitious. There were periods when certain special interests gained greater ascendency because of strife, favoritism, or certain new and favorable conditions, but the most far-reaching benefits come always when the rights of all are recognized.

The need for knowledge, of implements and devices, of means of conveyance and intercourse between nations to further commerce, recognition of the necessity of laws and regulations induced if not compelled merchants to lend their encouragement in such direction and help the promotion of industries and systems of government and learning. As an example, we may utilize the history of the Phoenicians, who for centuries were the schoolmasters of the ancient world; they fought their way towards progress, not by force of arms, but by commercial conquests, establishment of cities, seats of learning and furthering the industries. We may compare with them their successors in power when the merchant made place for the warrior. The Romans were great politically, but never economically; they, or at least the ruling class, lived largely on the labor of others, and compelled tribute from the weaker. It is pleasing to cite our own country, founded upon a pact in which cooperation was a predominating thought, and throughout her remarkable history the same ideal has stimulated development. Possibly there is no country which represents both phases so well as does Germany, where today the life of the individuals, industries and municipalities are systematically directed by studied cooperative measures. So every period up to the present might be scrutinized and in the disclosure those in which cooperation was predominant show to better advantage than the times during which power or privileged classes controlled the affairs of government and society.

That there are numerous examples evidencing greed, extortion and piracy on the part of the merchants is readily admitted. Man is not a finality, he will always be in the making and there always will be improvement if rightly guided under the influences of cooperation.

These tracings have been made to emphasize that permanent progress is not brought about by enslavement nor destruction, but by enlarging the powers of humanity, and through cooperation, build up resources and extend knowledge, and that in such endeavors throughout the years of commerce the merchant classes have been ever foremost.

It must be admitted that large corporations are necessary and have been established in response to popular demand because of economical necessity, but we must remember that economy per se is not and never should be the sole aim of society. Competition is gradually giving way to combination and cooperation and monopoly is being regarded with more and more odium. This, then, is the point I have desired to reach, namely, that everyone should view the encroachment of large central supply houses on the trade of the stores in towns and cities with grave concern and give the matter study and thought. I have seen in the last three years one of these large business houses treble its capacity; what this signifies need not be told more emphatically. Society and government should

seek to encourage the cause of the small dealer rather than aid the development of these large department stores.

No right-minded person will consent to penalize success that results from fair methods nor consent to laws which would have the effect of pensioning and subsidizing industrial weaklings, but that which sustains the life and makes for greatest general progress is to be preferred over individual or corporation interests. There should be no excessive profits for the few unless the many can be decently self-supporting. This should be one of the purposes of cooperative measures, and the country overlooking this will build a nation of a few with all the advantages of wealth and education, and the vast number rightfully dissatisfied with their lot. Such is the history of military governments exalting the leaders and oppressing the vast majority, and excessive money power creates like conditions. The large interests have realized the results and have willingly donated funds as a sacrifice for all kinds of laudable enterprises for educational and charitable purposes. The fault has not been entirely theirs, for unfortunately the trend is to the cities and overcrowding, and the necessity of gaining livelihood encourages the payment of low wages. As a result also, in a good many instances, employes are "round pegs in square holes," and are overpaid, no matter what their compensation. They are in a large measure responsible for their position in life because they fail or are incompetent to exercise that degree of intelligence which helps to success. This is particularly unfortunate in an agricultural country and should direct cooperation to making these pursuits more attractive. The large establishments must be brought to realize that a good citizenship can not come of those who are willing or are compelled to accept charity. By accepting of such service and promoting the activities wherein low wages are essential, they have saddled upon themselves accompanying responsibilities. It is largely up to them to perfect plans for betterment of conditions which are now being subjected to much criticism by the public, who, by the way, are not as mindful of their own contribution to the system as they should be.

Doubtless many of you, and perhaps more particularly those from the smaller cities, have suffered loss of revenue by the detraction of trade through mail order schemes and catalogue houses. In order to impede the extension of these business methods, will require not only the cooperation of business men but of all thoughtful citizens. The National Association of Retail Merchants has education along these lines as one of its purposes, and should receive your encouragement.

Merchants in all towns should work together along well-studied plans for enlightening the citizens and farmers of the respective communities on this important subject. The local newspapers are dependent largely on the successful merchants, and they are in position to assist in this campaign of education. Merchants establish stores for the convenience of the farmers, this contributes gradually to the growth of the community and increased property values; destroy the merchants and the town becomes dead; property values decrease. Cooperaiton constitutes the mutual method of growth between the farmer and the merchant. Each is dependent on the other; when either one is hurt, immediately the strength and usefulness of the other is weakened. The very foundations of

our present cities were built on the growth of the small store and the town grew with it, and so it should continue to be. Our social system is constructed on these small beginnings of the country town. Some towns may grow on account of certain climatic or resourceful advantages, but in an agricultural country, the country merchant is the most important link between the farmer and what the farmer produces, and the increase in the value of his land comes from the stability and growth of the country town. Convince your farmers that this is their interest as well as yours. Then, the farmer has the advantage of the neighboring town's high school, opportunities given him by the progressive merchants who also pay further taxes that are providing better roads over which the farmer can more economically convey his produce.

So I might continue relevant arguments, many of which also hold good with regard to the diversion of trade from the druggist to the peddler. In this connection another viewpoint may be included, namely, that educational qualifications are exacted of the druggist to conduct his business. The peddler often assumes the position of physician and pharmacist without the least knowledge anent the application or compounding of medicines or the drugs themselves.

Cooperation is the keynote of a square deal for producers and distributors as well as consumers. Cooperation through organization has developed the great industrial enterprises and is necessary for the life of small business. Competition was once necessary, but now its importance and value rest in excellence of service and quality of products. It is the height of folly for business men to cut their own profits because the competitor may perchance be put out of business.

There is one material attribute of cooperation which is not fully appreciated or perhaps understood, and that is, it involves surrender of independence, and this frequently makes cooperation difficult because of the innate selfishness of man. If two people agree to cooperate in regard to any matter it means that each one of them must surrender some measure of his freedom in order to carry out the agreement, for if one made all the concessions, it would be working for only one of the parties. Now, of course, in the transaction of one class or organization with another, they are representative of the individuals. This would apply with arrangements between the clerk and proprietor, or organizations representing the two, or as between retailer, wholesaler and manufacturer. Cooperation invariably implies reciprocity.

The injustice and lack of wisdom that obtains in price-cutting is too well recognized to require elucidation, but for a general example: A manufacturer produces and exploits a meritorious article for which a price bearing a fair profit is fixed. In order to attract trade and link their own name with a good product, the price is cut by a dealer, obliging others to follow suit, and the result is inevitable dissatisfaction. As a further result, the sale of profitless articles under the established conditions is curtailed and displaced by others that are not as well known. The correction of this unfortunate condition has occupied the thoughts of all concerned, and every time a solution of the problem was seemingly effected, if no other interference appeared, then legal construction has spoken adversely. Consider the recent suit against the Kellogg Corn Flake Company, charging conspiracy, restraint of trade, subornation, oppression of the

consumer, and contraventions of the Hepburn law, which makes it a misdemeanor for a railroad to sell transportation at less than a fixed price.

A means will be found for the correction of price-cutting and competition dependent on price-cutting will be done away with. The trouble after all is largely that though cooperation is talked, there is lack of willingness to conform to the essential of cooperation, namely, that all parties concerned must be willing to surrender some measure of their freedom.

The plan recently put into practice, of a conference between associations of drug interests should prove advantageous, but provision should be made to adequately recompense those who give their time to this service. The large number meeting annually in convention can present valuable suggestions and shed light on every viewpoint, but a smaller body having all these different ideas before them for investigation can better systematize effective means of action.

The possibilities will become greater and better results will follow when there is stronger and more direct cooperation between State associations and National bodies. The individuals are occupied with business affairs, but their continued welfare must be looked after, and this should be one of the purposes of associations. In this progressive age with quick changes there has come a demand for such means.

Such need is also discerned in more strictly professional lines. Professor William Ostwald, the German chemical authority, tells in the Scientific American about the functions of the recently organized international society with headquarters in Munich, named "The Bridge." This association is intended to form a general clearing house and reference bureau for chemists all over the world. Professor Ostwald refers to the wonderful strides that science has made, and so rapidly, that scientists themselves can no longer keep pace with it, so that such cooperative assistance is necessary. Some central means is needed whereby chemical progress in all its numerous ramifications shall be suitably recorded, digested and made available. Such cooperative pharmaceutical work has been done by the hygienic laboratories of the U. S. Public Health and Marine Hospital Service, which was of great help to the Revision Committee of the United States Pharmacopoeia.

Professor Tschirch, of the University of Berne, has the same thought in mind for international service and suggests the establishment of a laboratory also, so as to extend the field of utility.

These references are made because I believe there is a necessity for similar work which should be undertaken by the American Pharmaceutical Association, and, therefore, strengthened by other reasons that can easily be given, this organization should have a permanent home where pharmaceutical information may be systematically recorded, and investigations serviceable for pharmacists may be made. At the same time, efficient assistance can be rendered in Pharmacopoeial and National Formulary work; and in cooperating with the laboratories of the American Medical Association might be helpful in many other ways.

Whatever cooperative work is done by the American Pharmaceutical Association should be done with a view of promoting the purposes of these profes-

sions and for the good of humanity. The improvement of our materia medica and the correction of deficiencies wherever they are known to exist, the production of better and more efficient means and methods for the prevention and treatment of disease, should be paramount to personalities and selfish interests. It should always be remembered that our knowledge relative to materia medica is not final, that we can not be dogmatic in the rejection or acceptance of medical agents; that judgment thereon must come only after due investigation.

It is impossible for the view of any individual to compass the whole domain of medical science and art. Unfortunately, humanity is selfish, and while higher education should and will modify the trait, there will always persist the desire to gain advantage by one over the other. There is a tendency of some who have acquired distinction to become dictatorial and receive the ideas of others with contempt, or at least without the unbiased judgment that should be given the endeavors of those who have a desire to be helpful and whose opinions may possibly not coincide with theirs. We are sometimes persuaded that ambition, jealousy and hatred are as evident in professional lives as in those engaged otherwise.

The work of pharmacists and physicians is interdependent and requires cooperative action; everyone who sincerely labors for advancement along these lines is entitled to an opportunity. Charlatans, or those who impose on the public and have no other motives than financial gain, should be exposed, and the public should be enlightened concerning products that can not possibly possess any real merit, or perhaps worse, are hurtful if their use is persisted in.

Cooperative work among associations, if properly directed, should have the same relative value as the work of members within an association. The "get-together proposition" is the problem of professions as well as of merchants and mechanics. We are generally agreed that the common interest of an association should be the interest of individual members. So the interests of different associations having certain objects in common can be directed by harmonious cooperation for profit of each association, and thereby every individual concerned is benefited. Further analysis proves that association service serves the individual who lends a helping hand in the promotion of common interests more than if he had directed his activities without concerning himself with the interests of others. It should be the spirit of those engaged in the drug business, whether they are most concerned in commercial or scientific pharmacy, and be the inspiration upon which we shall be lifted step by step to greater, broader and more hopeful things while laboring for our own interests and the welfare of humankind.

The advancement of pharmacy depends largely on those who enter upon this work, and in this selection the pharmacists may be helpful; the pharmacy schools and pharmacy boards, aided by the associations, are striving for higher qualifications, but this is impossible without the hearty cooperation of employers.

May I say here also that the success of a business depends on the concerted action of employer and employes, and that the lack of coordination in stores is not as uncommon as many suspect. The energy and enthusiasm displayed by employes when they are invited to work with the employer or manager for the

good of the business transcends by far the spirit evidenced when they are only directed to work for the head of the house.

Pharmacy must strive for advancement if the public is to receive the proper service; and if the people would exercise the same judgment in the selection of the pharmacist that they do in employing a physician, the chain of cooperation would be strengthened.

So the linkage of cooperation might be traced through every activity, and the progress if not the continuance, is dependent thereon. Successful cooperation requires above all a coherent plan which can be explained to the participants and which will in its working so far conform to the nature of things as to be practical.

Everyone should be given a fair opportunity of sharing in the profits and prosperity of this country; cooperation should be conspicuous in every activity, joining together employer and employed as comrades, not estranged as conspirators, but working together for respective common interests and good, exhibiting loyalty, efficiency and service with a determination to live right and think right.

AN INTERNATIONAL PHARMACOPOEIA.

Scientific progress is now international, and through the medium of the professional press each advance recorded in some foreign country is rendered accessible to all engaged in the same branch of study or research throughout the world. But today it is not the problem of a common tongue, such as Latin in the Middle Ages, which must be solved; the difficulty lies in another direction. Science in all its branches has become so complex that a number of more or less generally recognized standard terms have to be employed, and comprehension of some new discovery or progress, and its intelligent utilization, are based on the uniform value of certain expressions. In medicine and pharmacy uniformity in the strength of preparations answering to identical names is the first postulate for an internationalization of therapeutics, and the first step towards the attainment of this ideal was effected at the 1902 Brussels Conference on the Unification of Pharmacopoeial Formulas of Potent Drugs. Much remains to be done, however, before absolute uniformity as regards the strength and method of assay is attained in the case of several potent drugs with regard to which variations still exist between several Pharmacopoeias. It is at this moment, when the demand for a fresh conference is being heard, that Professor Tschirch comes forward with a communication to the "Schweizerische Wochenschrift fur Chemie und Pharmazie," drawing attention to the waste of energy which at present takes place by each country conducting its pharmacopoeial research work practically independently of the advances recorded in other countries, so that a great deal of work is often unnecessarily duplicated. On the other hand, each country has a tendency to give preference to the work published in its own language, so that the advances achieved in other countries are either ignored or a knowldge of them is gained only through the medium of an abstract. He proposes that an International Pharmacopoeia Bureau, with its seat in Berne, should be estab-

lished with the object of collecting all publications referring to pharmacopoeial revision, the analysis and assay of drugs. Annually a volume of abstracts of such publications would be issued by this bureau in French, English and German. The Professor is of opinion that the abstracts could be contained in a volume of about 1000 pages. But the work of the bureau should not be confined to abstracting only; he wishes to see it equipped with a laboratory in which assay methods could be subjected to careful revision, with a view to comparing the methods adopted by the various Pharmacopoeias in order to determine the best method. The Brussels agreement merely states the alkaloidal content of a drug, but gives no method of assay, so that the processes prescribed by various Pharmacopoeias yield varying results. Professor Tschirch suggests that the Swiss Pharmaceutical Society should petition the Federal Council to invite members of all the pharmacopoeial commissions to a conference in Berne in order to discuss his proposal and possibly establish a program of work.—*The Chemist and Druggist.*

DRUGGISTS GO ON STRIKE.

As a result of obnoxious regulations prepared by the Minister of Finance, imposing additional taxes on specific medicines and on perfumes, whether made in or imported into Argentina, more than 400 druggists in the city of Buenos Ayres went on a strike and locked up their stores. The objection of the trade was not to the taxes themselves, because these will be put off on the consumer, as is the present stamp tax, but to the mode in which they were to have been imposed and to the harassing and inconvenient regulations for their collection. Especially objectionable is the graduation of the tax according to the price of every article charged to the consumer, the different prices to be indicated by the stamps to be affixed to the bottles, boxes and packets. The expense that would have been incurred in the work of stamping is estimated by the druggists at 25 percent of the tax. The wholesale stores and the retail shops were closed as a protest, and the stores in which perfumery was sold gave notice to the public that the sale of this article was suspended.

The government tried to meet the emergency by authorizing the dispensaries of the Public Assistance Department and the National hospitals to make up medical prescriptions for the public at cost price, and the private hospitals also opened their dispensaries for that purpose, but in a week at most there would have been a scarcity of drugs in those places. The Acting President of the Republic had a conference with the druggists and it was arranged that a committee should be appointed to devise a more satisfactory mode of collecting the new tax.—*Voice of the Retail Druggist.*

Papers Presented to Local Branches

OBSERVATIONS ON THE KEEPING PROPERTIES OF DIGITALIS AND SOME OF ITS PREPARATIONS.*

ROBERT A. HATCHER, M. D., AND CARY EGGLESTON, M. D.

The opinion is prevalent among both physicians and pharmacists that digitalis and its preparations undergo deterioration with considerable rapidity. Certain manufacturers have made much of this belief in the claims put forth regarding the advantages of their specialties, which, of course, are said not to be subject to such deterioration. In addition, however, to these obviously interested claims we find reports of great loss in activity of the leaf coming from men of such reputation as Focke,[1] who found deterioration amounting to 76 percent of the original value in two and three-fourths months in a leaf containing about 12 percent of moisture. He found a similar loss in one year in a leaf having 6 to 8 percent of moisture; leaves with 6.5 percent of moisture lost from 14 to 53 percent in strength in a year; those having 3 percent of moisture lost 15 percent in activity in the same period; and there was 5 percent loss in a year when the moisture had been reduced to 1.5 percent, the low point recommended by Focke to ensure the keeping properties of the leaf.

Houghton and Hamilton[2] report their results in a series of observations upon the loss of potency of different digitalis preparations. An extract of digitalis made by percolation with fairly strong alcohol showed, on tests of eleven samples, an average loss of activity of about 40 percent in a period of five years—an annual loss of about 8 percent. Eight samples of a fluidextract of digitalis, made according to the U. S. P. VII, with a menstruum of 62.5 percent alcohol, showed an average loss of 25 percent in six years—an annual loss of about 4 percent. Eleven samples of fluidextract of digitalis made according to the U. S. P. VIII, using 48 percent alcohol as the menstruum, showed an average loss of 10 percent per year, or a total loss in activity of 35 percent in three and one-half years. Lastly, six simples of tincture of digitalis made according to the U. S. P. VIII showed a loss in potency of 27 percent in three years—an annual loss of 9 percent. These results would seem to show that the official alcoholic fluid preparations of digitalis undergo deterioration at a rate ranging from 4 to 10 percent per year, varying somewhat in relation to their alcoholic content.

England[3] says of the commercial fluidextract of digitalis, "it is, largely, a concentrated hydro-alcoholic solution of certain proximate principles, or their decomposition products arising from the use of heat." He cites an observation of

*Read before the New York Branch, April 14, 1913.

Roger, giving no reference, however, to the effect that a 5 percent maceration of digitalis, when concentrated by 6.6 percent (sic!) by heat on a water-bath, deteriorated to such an extent that it required sixty times as much after concentration as before to yield its toxic dose.

Hale[4] cites the observations of others on the question of deterioration, and remarks that it would seem to be fairly well established that the leaves should be dried quickly and carefully, and be properly stored so as not to become moist. Hale thus accepts Focke's views, at least to a certain extent. He does not believe, however, that it is necessary to reduce the moisture in the leaves to as low as 1.5 percent, as suggested by Focke, and maintained by certain manufacturers who prepare a specialty along these lines. Hale reports that leaves which had been stored for eight years in a paper bag, and which contained 9.1 percent of moisture, gave a titre of 750 mg. per kilo of frog by the one hour method. Another sample which had been stored in a cloth bag for three years, and which contained 5.8 percent of moisture, required only 500 mg. to kill a kilo frog. A third specimen required 550 mg. per kilo of frog, although it contained 7.8 percent of moisture and had been kept in a paper bag for two years. Leaves kept in a cloth bag for a year, and having a moisture content of 9.4 percent, also gave a frog titre of 500 mg. per kilo. By way of comparison it may be stated that a fresh specimen of select English leaves, having 7.3 percent of moisture, showed 700 mg. per kilo of frog as its titre, thus: three of the old samples showed an activity greater than that of the fresh, high grade sample of English leaves. The fourth showed an activity about equal to that of the fresh English leaf, though it had been kept in a paper bag for eight years, and in spite of the fact that it contained 9.1 percent of moisture.

Hale found that a sample of mouldy leaves showed a deterioration of about 90 percent in one year, and he cites Focke as having found that a specimen which gave a valor of 4.36 showed a valor of only 1.6 a year later, having become mouldy in the interim. It would be a useless waste of time to consider these mouldy specimens further for, of course, they should never be used in any case.

Several observers have contended that heat caused deterioration in digitalis. Some of these are cited by Hale, who then gives some of his own observations which tend to show that temperatures below 120° C. maintained for a moderate length of time do not affect commercial samples of the leaf. This is also borne out by the recommendation of Focke to prepare the leaf for keeping by drying it rapidly with the aid of moderate heat.

Two tinctures of digitalis, made with 70 percent alcohol, in Hale's hands showed a frog titre after eight years which was equal to that of the average fresh tincture prepared from a high grade new specimen of English leaf. On the other hand, assays of a numbr of digitalis preparations obtained in the open market showed a little deterioration in twenty-two months. Three samples of official fluidextract lost 4.3, 6.9, and 8.7 percent, respectively, in this time. Four non-official preparations, obtained at the same time and under like conditions, showed deterioration from 14.3 to 33.3 percent in the same interval of time.

Moran[5] records a number of observations, which include some contradictory results, made upon different samples of tinctures of the same age; thus, one showed no deterioration in four years, while another is stated to have appeared

"to have deteriorated considerably," in the same time. He also tested a tincture which was twenty-four years old and one made from an extract which was nineteen years old. In the case of both of these he says that the activity was probably due to the saponin present, inferring that they retained no digitalis action at all. In the meager details that he gives, however, he states that the perfusion of 20 cc. of the twenty-four year old specimen through the heart of a frog caused "No tonic effect, acceleration of beat; systolic arrest." Of the tincture from the nineteen year old extract only 11 cc. were required to give, "No tonic effect; no slowing; systolic arrest." When the tincture which had not deteriorated was used slowing and tonic effect were observed and systolic arrest was caused by 12 cc. It is true that the typical digitalis action on the frog's heart is early slowing with the so-called 'tonic effect,' and systolic arrest is the typical end reaction. However, it is not infrequent to see a heart poisoned with digitalis react atypically with no slowing, or even with acceleration, and in any case the stage of slowing is usually soon followed by one of acceleration. It is quite possible that Moran's frogs happened to react atpically, or that the stage of slowing was brief and overlooked, the heart passing into that of acceleration. Clark[6] perfused frogs' hearts with digitonin, the saponin body of digitalis, and found that, while it caused "systolic effect," its action was, * * * produced instaneously, but it is not complete, the auricles and part of the ventricles continuing to beat for some hours." Further, he found that in the concentration of 0.01 mg. per cc. of Ringer's solution it has no action, while the action described above is produced when the concentration is raised to 0.1 mg. per cc. of fluid. It is probable that the results reported by Moran were not due to saponin alone, for it is doubtful if this substance is present in the tincture in sufficient concentration to have any effect upon the heart such as that described. This is supported by Kiliani,[7] who states that there are but the merest traces of digitonin in digitalis. Certain it is that the end reaction of systolic arrest is a typical digitalis action, and is not what Moran terms a "saponin effect." If we consider, as we are almost compelled to do, that the systolic arrest seen by Moran was due to digitalis action and not to saponin, then his twenty-four year old tincture still possessed 60 percent of the activity of his undeteriorated tincture, and the nineteen year old extract showed no deterioration.

Moran's own conclusions are to the effect that a tincture should retain its activity for two or three years, but it is difficult to interpret Moran's results.

Goodall,[8] in a note on the keeping properties of the tincture of digitalis concludes that the "tincture of digitalis probably retains its full activity for one year, but that after that period deterioration of its potency to an important extent is likely to take place." His experiments are not given in detail, hence it is impossible to determine the exact value which is to be placed upon his findings, particularly as the information given suggests certain decided defects of technic and control.

Haynes (cited by Goodall without reference) is stated to have found that tincture of digitalis would keep for two years without material change in activity. He kept his specimens in the dark.

We have cited sufficient evidence to show the trend of opinion, and it may be mentioned that the pharmacopoeias of several countries, namely, the French,

Swiss and German, require that the supplies of digitalis leaf be renewed annually. The German pharmacopœia has adopted the recommendations of Focke to the effect that the leaf should be dried over calcined line and kept in small, completely filled glass containers, protected from light and moisture.

In spite of the general consensus of opinion to the effect that age, moisture, light and heat, alone or variously combined, according to the observer, cause marked and rapid deterioration in digitalis leaves and alcoholic preparations, we long since came to a contrary opinion, for we had observed that samples of powdered leaf which had been in the laboratory in cardboard containers for several years, and tinctures prepared from these leaves at different times in the past few years retained their activity almost, if not quite, unimpaired. Stimulated by this apparent anomaly, we undertook an investigation of the question of deterioration of digitalis leaf and some of its preparations.

We began by making new tests of the activity of our own old samples of the leaf and of tinctures made therefrom. Comparing the results of these tests with the records of previous ones, we found that none of the specimens which were four or five years old showed any material deterioration. These samples of leaf and tincture had been kept without any special care, the tinctures being stored in glass-stoppered bottles and exposed to the light and temperature changes of the laboratory. The leaf, as has been mentioned, was kept in the original cardboard containers, and not protected in any way from either heat or moisture changes as these occurred in the atmosphere of the laboratory, but it should be said that the store room is unusually dry for this climate. The cat method was employed for the estimation of the activity of the specimens, and in some few instances we also used the one hour frog method with results quite in accord with those obtained with the cat. We sought to obtain some older specimens than ours, and, through the courtesy of E. R. Squibb & Sons, and Gilpin, Langdon & Company, we were supplied with samples of the leaf, ground and unground, tinctures, extracts, and fluidextracts ranging from less than one to more than thirty years old. With some of these we conducted tests on both cats and frogs.

A sample of German digitalis which had been kept in paper for three years on a jobber's shelf was received in the form of No. 60 powder and was found to contain 7.5 percent of moisture. It gave a cat unit of 110 mg. per kilo of cat weight. A sample of English leaf in fine powder, which had been kept on a shelf in paper for three years gave a cat unit of 128 mg., and it contained 6 percent of moisture. Both of these were considered by the jobbers as being entirely worthless except as specimens. The fallacy of this view is obvious, for each was found to have an activity about equal to that of the average fresh specimen of good quality. By the cat method the average unit for digitalis, in terms of leaf, is 100 mg. per kilo of cat weight; the range of variation in activity of different fresh specimens of good quality runs from 75 mg., for the most active samples, to 120 mg. for the less active. Since these two showed no deterioration we then examined the oldest specimen of leaf which we had obtained.

This was a sample of about 12 gm. of whole dried leaf which had been kept in a glass-stoppered bottle for not less than twenty-five years. The entire specimen was powdered and passed through a No. 60 sieve. After thorough mixing,

10 gm. of this powder were extracted as follows: The powder was moistened with 40 cc. of diluted alcohol (U. S. P.) and allowed to stand for twenty-four hours in a cylindrical percolator; it was then packed tightly and percolation was started; this was allowed to continue until about 30 cc. were obtained; percolation was then interrupted, maceration continuing until the following day, when percolation was again allowed to proceed until 100 cc. had been obtained.

Three tests by the cat method gave the following units: 74 mg., and 95 mg., and 82 mg., an average cat unit of 87 mg. per kilo. Perfectly fresh samples of the most active leaf which we have been able to procure have not shown a lower cat unit than 65 mg. per kilo. This twenty-five year old leaf was, therefore, of very high activity, better even than the average fresh specimen. The leaf was very dry and, although we did not determine its moisture content, we may assume, according to the statements of Focke,[1] that it contained much more than his required minimum of 1.5 percent, especially as the specimen had not been preserved with any particular care. This specimen, therefore, had almost certainly undergone no deterioration during the twenty-five years of standing.

The cat has been said, incorrectly we believe,[9] to be unsuitable for the detection of deterioration owing to the toxic nature of the products of such deterioration, but none of our cats showed atpyical effects.

We also examined this specimen by the one hour frog method, and found the fatal dose to lie between 900 and 1000 milligrams per kilo of frog, which is about 25 percent higher than the average as determined by Hale, and by Famulener and Lyons.[10]

It is probable, however, that the results obtained by the cat method are the more nearly correct in this case, for it is well known that frogs vary considerably in susceptibility to the digitalis bodies, such differences have been discussed fully in the article previously cited,[9] and we would refer the reader to that for confirmation of the statement.

Turning to the fluid preparations, we found that a sample of the fluidextract made over ten years ago gave a cat unit of 110 milligrams of leaf per kilo. This specimen was made with 50 percent alcohol as the menstruum, and probably showed no deterioration.

A sample of fluidextract of digitalis which was said to be "not less than thirty years old" was then tested on the cat, three tests giving units of 130, 162, and 153 milligrams per kilo, respectively, an average cat unit of 148 milligrams, the action being perfectly typical of digitalis. As we have no means of knowing the original activity of the leaf from which this fluidextract was made we might assume that it was of the average strength, that is, that it would originally have shown a unit of about 100 milligrams. On this basis we might suppose that in more than thirty years it had declined only about 40 percent in activity. As a matter of fact, it was more active by 32 percent than the average of thirteen specimens of fluidextract obtained in commerce in the present year, the explanation being that it is especially diffcult to prepare a fluidextract of digitalis which represents the full activity of the leaf.

This thirty-year-old fluidextract, having been made according to the Pharmacopoeia of 1870, had a menstruum composed of about 70 percent alcohol, 20 percent glycerin, and 10 percent water. Tests of this specimen by the one-hour

frog method gave a fatal dose of about 1300 milligrams per kilo of frog. This is almost certainly too high a figure, and may be attributable to the presence of glycerin in the preparation. Glycerin often delays absorption from the lymph-sac of the frog and makes the specimen which contains it seem weaker than it actually is[9], but this is without influence in the case of tests made on the cat by our method.

This specimen of fluidextract of digitalis had, therefore, probably undergone no deterioration in thirty years, since, as stated, it was far more active than the average *fluidextract* of digitalis now in use.

England[3] contends that heat, even when moderate and applied for a comparatively short time, causes enormous loss of activity in the fluid preparations of digitalis. Focke controverts this statement by the results of his experience in the concentration by heat on the water bath of aqueous infusions of digitalis when they are too weak to be tested on the frog. He recommends concentration by 50 percent, and finds that the process causes no reduction in activity. In this country nearly all of those who use the frog method of standardizing digitalis preparations employ heat to reduce the amount of alcohol before testing such preparations as the tincture.

To these statements with regard to the influence of heat we may add that we found a sample of solid extract of digitalis, which was made in 1908, and which was said to represent two and one-half times the weight of leaf, to have a cat unit of 52 mg. per kilo (that is, 128 mg. of the leaf). There was no obvious loss in activity, although the preparation had been reduced to the consistency of a solid extract by means of evaporation in the presence of heat.

At this point we decided to stop further testing of the dried leaf and of those pharmacopoeial preparations of digitalis made with a menstruum containing 50 percent or more of alcohol, for it was evident that deterioration does not occur to any considerable degree in such forms of the drug under ordinary conditions.

It is unnecessary to mention the infusion further than to state that frequent observations confirm the well-known fact that it is prone to undergo rapid deterioration even in the presence of a small amount of alcohol, such as is now used.

Deterioration of digitalis in the presence of water is further well illustrated by the following experience: We diluted a tincture of digitalis of known strength with nine parts of normal saline solution and set it aside, closely stoppered, for seventeen days. It was exposed to the light during this time, and for the most part was in an unheated room, though on some days it was exposed to a temperature of 70° F. for as much as five hours at a time. On the seventeenth day after dilution we tested this solution on cats and found a unit of 81.5 mg. of leaf per kilo. (Three tests, 84.6, 71.0, and 89.0 mg. per kilo, respectively). On the same day we tested the tincture from which the dilution had been made and found it to have a cat unit of 62.2 mg. of leaf per kilo (two tests, 61.8, and 62.7 mg., respectively). In a period of seventeen days, then, this aqueous dilution of a tincture of digitalis had lost 31 percent of its original activity. It is remarkable that it had not lost more than this, and the low temperature of the room may be partly responsible for its comparatively moderate deterioration.

The deterioration of aqueous preparations of digitalis has long been recog-

nized and this fact has recently been recalled by Cushny,[11] who says of strophanthus, squill and digitalis that "Their active principles readily undergo decomposition when the tincture is diluted with water. * * *"

We are disposed to remark that it is irrational to dispense the tincture of digitalis already diluted with water, or with an aqueous vehicle. The physician should order the necessary dilution to be made by the patient each time that he takes the prescribed dose, or should employ a vehicle containing a sufficient amount of alcohol.

There is one other preparation which deserves notice, only to be condemned. This is the acetic fluidextract. A sample of this preparation which was made in 1901 was found to be practically without digitalis action. In order to avoid the disturbing influence of the acetic acid present in the specimen 5 cc. were neutralized with an excess of sodium bicarbonate and evaporated on the water bath to a soft extract. This was treated several times, while still on the water bath, with strong alcohol, the alcoholic extract was decanted and evaporated. It was then taken up with 5 cc. of diluted alcohol, making a clear solution. This was further diluted with normal salt solution to make 50 cc. This solution was then tested on a cat in the usual way. At the end of an hour the animal had received a quantity which represented 1000 mg. of digitalis leaf per kilo. As the animal showed no perceptible effect save slight slowing of the heart (due, in all probability, to the fluid injected), it was released. Five hours later it had still shown no positive digitalis effect.

This same preparation—acetic fluidextract—was injected into the ventral lymp-sac of each of three frogs. The first weighed 14.5 gm. and received 0.25 cc. total, the second 21 gm. and received 0.5 cc. total, and the third weighed 21.5 gm. and was injected with 1 cc., an amount equal to about 5000 mg. per kilo of frog. None of the frogs died.

A second sample of acetic fluidextract of digitalis was tested to see if a fresh preparation was active. This sample was made on January 16, 1913, and was tested on the 29th of the same month, only thirteen days after its preparation. It was found to have a cat unit of 925 mg. per kilo, or, roughly, it had only about 10 percent of its supposed activity.

From the foregoing it is obvious that this preparation is worthless. This is only what is to be expected, for the decomposition of glucosides by dilute acids is universally recognized.

In addition to these tests of the leaf and galenical preparations we have tested some of the proprietaries with reference to their deterioration. One of these, which has been claimed to be permanent, namely, Digalen (liquid), gave the following results:

Two specimens obtained in 1912 were tested at the same time and one gave a cat unit of 1.52 cc. per kilo, while the other gave a unit of 2.45 cc. per kilo. A specimen obtained in 1908, and kept sealed as originally sent out, gave a cat unit of approximately 3 cc. per kilo when tested in November, 1912. In the case of the first two specimens, obtained fresh at the same time, the stronger was almost 100 percent more active than the weaker. The specimen of 1908 was only about half as active as the one of 1912. It is fair to assume that all of the batches of digalen are originally made of the same activity, and if this assumption be correct

this preparation is subject to far more rapid deterioration than either the digitalis leaf or its galenical preparations, which contain 50 percent or over of alcohol. The examples cited are but representative of our results with many different specimens of digalen.

It remains for us to discuss briefly some of the opposed findings here recorded.

All whose observations have been cited used frogs exclusively as the test animals in their determinations. Cloetta has contended that fresh digitalis contains little or no digitoxin, but that this constituent is developed during storage. It is known that digitoxin is irregularly and relatively slowly absorbed from the lymph spaces of the frog. If Cloetta's contention is correct the development of digitoxin during keeping would have a tendency to make the drug appear to have undergone deterioration when tested on the frog. On the other hand, such a change would not materially affect the activity of the drug when tested by the cat method, for in this the factor of absorption is entirely eliminated. The statement of Focke, that it is in the first few weeks after harvest that digitalis deteriorates most rapidly, and to the greatest extent, exactly coincides with the explanation just offered.

CONCLUSIONS.

1. Commercial digitalis leaves of good quality do not undergo any deterioration in many instances as the result of age; in a few cases they do appear to have deteriorated, but only with extreme slowness—at a rate probably not exceeding 1½ to 2 percent a year.

2. The same statement holds for the Pharmacopoeial preparations made with a menstruum containing at least 50 percent of alcohol.

3. Heat below 120° C., applied for a reasonable length of time, does not cause deterioration in digitalis leaves, aqueous infusions, or alcoholic preparations; in the latter case even though the preparation be reduced to a soft solid.

4. The acetic fluidextract is worthless.

5. Liquid Digalen is decidedly inferior to the alcohol-containing galenical preparations of digitalis in so far as permanency is concerned.

[1]Arch. d. Pharm., 1903, cxli, 128.
[2]Am. Jour. Pharm., Oct., 1909.
[3]Phil. Polyclinic, Jan., 1897.
[4]Hygien. Lab. Bull. No. 74, 1911.
[5]Medical Chronicle, No. 55, 1911-1912, p. 1.
[6]Brit. Med. Jour., 1912, II, p. 687.
[7]Arch. der Pharm., ccxliii, p. 7.
[8]Brit. Med. Jour., I, 1912, p. 887.
[9]Amer. Jour. Pharm., lxxxv, 1913, p. 99.
[10]Proc. Am. Pharm. Association, L, 1902, p. 415.
[11]Brit. Med. Jour., 1912, II, p. 685.

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Of General Interest

MINUTES OF A MEETING OF THE EXECUTIVE COMMITTEE OF THE NATIONAL DRUG TRADE CONFERENCE HELD AT THE NEW WILLARD HOTEL, WASHINGTON, JUNE 9, 1913.

In pursuance of the call quoted below the Executive Committee of the National Drug Trade Conference met at the New Willard Hotel, Washington, D. C., Monday, June 9, 1913, at 10 a. m. Present: John C. Wallace, Chairman, Charles M. Woodruff, Secretary, Prof. James H. Beal, C. Mahlon Kline, and Dr. W. C. Anderson as alternate for James F. Finneran.

The Secretary read the following call:

"In pursuance of the authority vested in me by Conference resolution No. 2, I hereby designate the members of the Executive Committee to constitute the special Committee authorized by said resolution to meet at the New Willard Hotel, Washington, D. C., Monday, June 9, 1913, at 10 a. m.

"This Committee will also meet with Mr. Harrison and Dr. Wright to approve or amend the enclosed copy of the proposed Harrison Bill which Mr. Harrison will introduce after approval by this Committee.

JOHN C. WALLACE, President."

Mr. Adolph G. Rosengarten, Mr. Samuel Rosengarten, Mr. S. L. Hilton, Mr. E. C. Brockmeyer representing the Coca Cola Co. of Atlanta, Ga., and Mr. M. I. Wilbert of the American Medical Association being present during the session were on motion of the Secretary unanimously accorded the privileges of the floor.

The Committee then considered paragraph by paragraph the draft of the bill referred to in the President's call and made many amendments to the same, after which at about 4 o'clock the Committee and its visitors repaired to the office of James F. Curtis, Assistant Secretary of the Treasury, where it met Mr. James F. Curtis, Surgeon-General Charles F. Stokes, Chief of the Bureau of Medicine and Surgery, Mr. Talbott of the Law Division of the Internal Revenue Department, and Dr. Hamilton Wright. Mr. Curtis presiding, having called the meeting to order, Mr. Charles M. Woodruff proceeded to state the amendments to the draft which had before received the approval of Dr. Hamilton Wright and the officers of the government interested, which amendments, aside from unimportant changes to correct obvious stenographic errors and to make portions of the bill consistent with the amendments of other portions, were as follows:

First. Eliminate the words "qualified by state or territorial law or by the laws of the District of Columbia to administer the aforesaid drugs," occurring in paragraph first. Mr. Woodruff advanced the argument that these words endangered the validity of the measure, should it be passed; and would give its opponents a strong weapon to use during the consideration of the measure by Congress; inasmuch as its constitutionality could be attacked on two grounds: First, that the provision amounted to a delegation of the legislative power en-

trusted to Congress, to the legislatures of the states; and, second, that it would effect a lack of uniformity in the law, since a physician in one state might not be qualified to administer drugs when, under the same conditions, he might be so qualified in another state. The reasons were considered valid by the representatives of the several departments of the government, and the amendment agreed to. This has equal reference to other paragraphs of the bill, as for instance paragraph A of Section 3 where the words "lawfully authorized practitioner of medicine, dentistry or veterinary medicine" were amended to read: "physician, dentist, or veterinary surgeon registered under this Act."

The next amendment discussed was the elimination from the draft of the second paragraph of Section 1, which paragraph will be found quoted at length in the memorandum hereafter made a part of these proceedings. Mr. Woodruff stated the Conference was not willing to entrust such arbitrary power as the provision contemplated to a medical board, or for that matter any officer or official; that the measure did not contemplate that any one by virtue of it should be granted judicial power to determine who ought and who ought not to register, and in effect who might or who might not dispense and practice medicine; and that the provision really granted both legislative and judicial power to the board it created.

Mr. Curtis inquired whether the Conference was at all fearful that such a board as the provision created would deny registration to any legitimate manufacturer, dealer, or practitioner; and remarked that he felt that there ought to be some provision in the law for preventing the registration of those who sold improperly or unlawfully. Dr. Hamilton Wright joined in the discussion by saying that that was the very object of the provision.

Mr. Woodruff rejoined by pointing out that, whatever might be properly done under the interstate commerce clause of the Constitution, the taxing power granted to Congress to provide for the needs of the government could not be used as a police measure for punishing those who had improperly handled these narcotic drugs; that this was a matter entirely up to the states.

Mr. Curtis asked Mr. Woodruff if the power to tax had not been decided to be a power to destroy.

Mr. Woodruff replied that it certainly had, and that Congress had used its taxing powers for the distinct purpose of destroying the importation, manufacture, sale and use of smoking opium, also phosphorous matches; but that in both these instances the tax had applied equally to all and therefore was not invalid for lack of uniformity; while in the present case the proposition was to tax good druggists and physicians and disqualify bad ones. That if it was desired to make a tax analogous to the smoking opium tax and the phosphorous match tax, the tax must be made prohibitive and apply to all importation, all manufacture, all dealing, dispensing, distributing, etc.

Professor James H. Beal then argued the matter at length, emphasizing the fact that this was not an interstate but an *intrastate* measure; that the government had never attempted by the exercise of its taxing power to invade the police powers reserved to the state; that this would be a strong and unanswerable objection to any measure containing a provision of this character, and that the several states have their own more or less efficient statutes regulating the

sale of opium, cocaine, etc., within their several borders; and only needed a federal provision of some such character as the one proposed to prevent interstate commerce being subverted to the practical nullification of their own police laws; that this law would give the authorities in the several states an incontrovertible record of those who sold within state jurisdiction; and that the courts had already decided that the United States could not use its taxing power for the purpose of going within the state and exercising police powers there. Although Dr. Beal was very clear in his exposition of the difference between the proposed measure as affecting *intrastate* business and a measure affecting only *interstate* business, no representative of the government seemed to appreciate the distinction. Mr. Samuel Rosengarten, of Philadelphia, several times during the discussion emphasized reasons already given and gave some original ones in support of the proposition to eliminate the provision.

During the discussion Surgeon General Stokes left, having whispered a few words to Dr. Hamilton Wright. Afterwards Dr. Wright explained that Surgeon General Stokes was very tenacious of the provision on account of the fact that the Army and Navy Departments were having much trouble in the ranks with those who use morphine and cocaine and purchased and distributed it to their comrades and shipmates who also use it; and that some power should reside somewhere to prohibit these from registering and paying the tax. It was suggested to Dr. Wright that plenary power resided in both the army and the navy to correct any abuse of this character. The discussion on this paragraph closed witnout results.

The next important amendment the Conference recommended was that physicians' prescriptions should be dated as well as signed and this was concurred in by the representatives of the government without discussion.

The next important amendment was a provision inserted at the end of paragraph 2, making it unlawful for any person to obtain by means of the order forms provided in the measure any of the drugs inhibited by the measure for any other than a lawful purpose.

The next important amendment recommended by the Conference was a provision at the end of Section 4, to make it clear that the delivery on written prescriptions should not be unlawful.

The next important amendment was reducing the amount of heroin in each fluidounce permitted to be sold irrespective of the law from 1-3 grain to 1-12 grain.

The next important amendment was the elimination of Section 8, which as written was indefinite, and would have made possession evidence of any sort of violation of the law; and the substitution thereof of an entire new section which makes possession by an unregistered person itself unlawful subject to certain exceptions, and places the burden of proving the exceptions upon the defendant. This section is quoted in full in the bill made a part of these proceedings.

This Conference of the Executive Committee of the National Drug Trade Conference with the department officers before named closed about 5:30 o'clock with the net result that there was an entire agreement between the Conference and the representatives of the executive branch of the government as to the draft of the bill under discussion except with reference to the provision creating

the Commissioner of Internal Revenue, the Surgeons General of the Army, Navy, Public Health Service, and the Chief of the Bureau of Chemistry, a board to practically decide who might register under the act and under what condition such registration might be suspended or revoked.

The Executive Committee of the Drug Trade Conference repaired to their room at the New Willard Hotel immediately, and took the action indicated in the memorandum hereinafter made a part of these proceedings. After the appointment of the Committee named in said memorandum to represent the Executive Committee and the Drug Trade Conference the meeting adjourned.

June 10th, having drafted the memorandum and the bill as the Conference had amended it, Mr. John C. Wallace, Professor James H. Beal and Mr. Charles M. Woodruff, the committee appointed to do so, proceeded to the office of Dr. Hamilton Wright of the State Department, and presented to him the memorandum and draft of bill in question, explaining that the Conference could not recede from its position, and that the united branches of the drug trade of the United States would not only support but vigorously oppose any measure that undertook to give any board or officer of the government the power to decide who should import, export, manufacture, compound, deal in, dispense, sell, distribute or give away any opium or cocoa leaves, etc. Dr. Wright received the Committee very courteously and again explained his position, saying in substance that it did seem to him the law would be ineffective unless some board had some power to prevent an improper person from registering. Mr. Beal, acting as spokesman for the Committee, agreed that the end sought was desirable but contended that the means provided for were improper and would not accomplish the result expected. He suggested that the Committee would have no objection to a provision authorizing the Commissioner of Internal Revenue, with the approval of the Secretary of the Treasury, to make proper rules and regulations for the enforcement of the act, especially as it was understood that the Commissioner already had that power by virtue of a general statute. Dr. Wright stated that he was expecting Mr. Talbot, of the Law Division of the Commissioner of Internal Revenue Department, to drop in any moment by previous appointment and that he desired his views upon the subject.

Afterward during the conversation Mr. Talbot dropped in. Dr. Wright asked him whether he had given the matter any further consideration and what he thought of it. Mr. Talbot said in almost these exact words: "Frankly speaking, Dr. Wright, I think these gentlemen are right, and that the bill is much stronger without the provision you are contesting for than with it," whereupon Dr. Wright says: "Well, then, let it go at that." Mr. Talbot further explained that the provision contemplated what the Department of Internal Revenue had always understood it could not accomplish even with the aid of the law; that the Department had been advised that it must receive the tax provided for by statute by whomsoever offered, giving as an instance the case of Indian reservation where a law of the government itself prohibits the sale of liquor, and the department had been advised that, notwithstanding this law, if one on an Indian reservation offered to pay the tax the department must accept it. He suggested the insertion of a clause giving the Commissioner power to make reasonable rules similar to that contained in other revenue measures and quoted from a

revenue law the phrase agreed to in the shorter memorandum quoted in the next paragraph. As a result of this Conference Dr. Wright and Mr. Woodruff jointed in dictating the understanding to Dr. Wright's stenographer, which was afterwards officially signed as follows:

"The attached is a Bill approved by the Executive Committee of the National Drug Trade Conference at a meeting held at the New Willard Hotel, Washington, June 9, 1913; approved in conference with Dr. Hamilton Wright at the Department of State, June 10, 1913, with the addition of the following to the last paragraph of Section one of the Bill: 'That the Commissioner of Internal Revenue, with the approval of the Secretary of the Treasury, shall make all needful rules and regulations for carrying the provisions of this Act into effect.'"

JOHN C. WALLACE,
President of the Executive Committee of the National Drug Trade Conference.
Attest: CHARLES M. WOODRUFF, Secretary.

This memorandum was signed attached to two copies of the Bill, one of which Dr. Wright wanted for Mr. Harrison, who is to introduce it, and the other he desired to submit to the Secretary of the Treasury and the Judicial Department with his letter of approval. There being no objections on the part of these Departments it is understood the bill is to be introduced by Mr. Harrison.

The following is the memorandum and the bill heretofore referred to in these proceedings:

MEMORANDUM.

The attached is a bill approved by the Executive Committee of the National Drug Trades Conference at a meeting held at the New Willard Hotel, Washington, June 9, 1913. It is based upon a draft which had had the approval of Dr. Hamilton Wright; and embodies changes in the latter submitted to Assistant Secretary of the Treasury Curtis, Mr. Talbot of the Internal Revenue Department, and Dr. Hamilton Wright, all of which were concurred in, except the elimination of the following from the second paragraph of Section 1:

"That the Commissioner of Internal Revenue, the Surgeon General of the Army, the Surgeon General of the Navy, the Surgeon General of the Public Health Service and the Chief of the Bureau of Chemistry of the Department of Agriculture be, and they are hereby constituted a Board with authority, subject to the approval of the Secretary of the Treasury, to promulgate from time to time, such rules as may be necessary in the judgment of the said Board to govern registration under the provisions of this Act, or the suspension and revocation of such registration."

Please note in Section 8 the insertion of the words "and also a violation of the last paragraph of Section 1 of this Act," intended to meet suggestions of Dr. Wright.

Practically, then, the only issue between the Executive Committee of the Drug Trade Conference and Dr. Hamilton Wright is the elimination of the provision quoted above; respecting which the Executive Committee unanimously adopted and submitted the following:

WHEREAS, The apparent effect of the second paragraph of the first section of the proposed Antinarcotic bill as at present framed is to confer upon a special board the power to make rules and regulations which might have the effect of refusing registration to or the suspending or revoking of the registration of persons engaged in strictly intrastate business; and

WHEREAS, The members of this meeting are opposed to the placing of such extreme power in the hands of any board or public officer; and

WHEREAS, Under existing law the Commissioner of Internal Revenue has ample power to make necessary regulations for the efficient enforcement of the proposed law imposing a revenue tax upon traffic in narcotic drugs; therefore be it

Resolved, That the President of this Executive Committee appoint a Com-

mittee of Three, of which he shall be a member, to call upon the Hon. Francis Burton Harrison and Dr. Hamilton Wright, and inform them that the Conference is unalterably opposed to entrusting the power to make rules and regulations denying the right to registration, or revoking or suspending registrations already effected, to any special board or officer.

The Committee so constituted consists of John C. Wallace, Prof. James H. Beal and Charles M. Woodruff.

Signed, JOHN C. WALLACE,

President of the Executive Committee of the National Drug Trade Conference.

Attest: CHARLES M. WOODRUFF, Secretary.

The attached is a Bill approved by the Executive Committee of the National Drug Trade Conference at a meeting held at the New Willard Hotel, Washington, June 9, 1913; approved in conference with Dr. Hamilton Wright at the Department of State, June 10, 1913, with the addition of the following to the last paragraph of Section one of the Bill: "That the Commissioner of Internal Revenue, with the approval of the Secretary of the Treasury, shall make all needful rules and regulations for carrying the provisions of this Act into effect."

JOHN C. WALLACE,

President of the Executive Committee of the National Drug Trade Conference.

Attest: CHARLES M. WOODRUFF, Secretary.

THE NATIONAL DRUG TRADE CONFERENCE BILL.

A BILL[1]

To provide for the registration of, with collectors of internal revenue and to impose a special tax upon, all persons who produce, import, export, manufacture, compound, deal in, dispense, sell, distribute or give away opium or coca leaves, their salts, derivatives or preparations; and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled. That on and after —— every person who produces, imports, exports, manufactures, compounds, deals in, dispenses, sells, distributes or gives away opium or coca leaves or any compound, manufacture, salt, derivative or preparation thereof shall register with the collector of internal revenue of the District his name or style, place of business and place or places where such business is to be carried on, provided, that the office, or if none, then the residence of any person, shall be considered for the purposes of this Act to be his place of business. At the time of such registry and on or before the first day of July, annually thereafter, every person who produces, imports, exports, manufactures, compounds, deals in, dispenses, sells, distributes or gives away any of the aforesaid drugs shall pay to the said collector a special tax at the rate of $1 per annum; *Provided,* That no employe of any person who produces, imports, exports, manufactures, compounds, deals in, dispenses, sells, distributes, or gives away any of the aforesaid drugs acting within the scope of his employment shall be required to register or to pay the special tax provided by this section; *Provided further,* That the person who employs him shall have registered and paid the special tax as required by this section.

It shall be unlawful for any person to produce, import, export, manufacture, compound, deal in, dispense, sell, distribute or give away any of the aforesaid drugs without having registered and paid the special tax provided for in this section.

That the word "person" as used in this Act shall be construed to mean and include a partnership, association, company or corporation, as well as a natural person; and all provisions of existing law relating to special taxes, so far as applicable, including the provisions of 3240 of the Revised Statutes of the United States, are hereby extended to the special tax herein imposed.

Sec. 2. That it shall be unlawful for any person to sell, barter, exchange or give away any of the aforesaid drugs except in pursuance of a written order of the purchaser or person to whom such article is given, on a form to be issued in blank for that purpose by the Commissioner of Internal Revenue. Every person who shall accept any such order, and in pursuance thereof shall sell, bar-

[1] As finally agreed upon by the Conference representatives and Dr. Hamilton Wright.

ter, exchange or give away any of the aforesaid drugs, shall preserve such order for a period of two years in such a way as to be readily accessible to inspection by any officer, agent or employe of the Treasury Department duly authorized for that purpose, and the State, Territorial, District and municipal officials named in section five of this Act. Every person who shall give an order as herein provided to any other person for any of the aforesaid drugs shall, at or before the time of giving such order, make or cause to be made a duplicate thereof on a form to be issued in blank for that purpose by the Commissioner of Internal Revenue, and in case of the acceptance of such order, shall preserve such duplicate for said period of two years in such a way as to be readily accessible to inspection by the officers, agents, employes and officials hereinbefore mentioned. Nothing contained in this section shall apply:

a. To the dispensing or distribution of any of the aforesaid drugs to a patient by a physician, dentist, or veterinary surgeon registered under this act in the course of his professional practice only; *Provided,* however, that such physician, dentist or veterinary surgeon shall be in personal attendance upon such patient;

b. To the sale, dispensing or distribution of any of the aforesaid drugs by a pharmacist to a consumer under and in pursuance of a written prescription, issued by a physician, dentist or veterinary surgeon registered under this Act; *Provided,* however, That such prescription shall be dated and shall be signed by the physician, dentist or veterinary surgeon who shall have issued the same; and *Provided further,* That such Pharmacist shall preserve such prescription for a period of two years in such a way as to be readily accessible to inspection by the officers, agents, employes, and officials hereinbefore mentioned.

c. To the sale, exportation, shipment or delivery of any of the aforesaid drugs by any person within the United States of America to any person in any foreign country.

The Commissioner of Internal Revenue, with the approval of the Secretary of the Treasury, shall cause suitable forms to be prepared for the purpose above mentioned, and shall cause the same to be distributed to Collectors of Internal Revenue for sale by them to those persons who shall have registered and paid the special tax as required by section one of this Act in their districts respectively; and no collector shall sell any of such forms to any person other than a person who has registered and paid the special tax, as required by section one of this Act in his district. The price at which such forms shall be sold by said collectors shall be fixed by the Commissioner of Internal Revenue, with the approval of the Secretary of the Treasury, but shall not exceed the sum of ——— per hundred. Every collector shall keep an account of the number of such forms sold by him, the names of the purchasers, and the number of such forms sold to each of such purchasers. Whenever any collector shall sell any of such forms he shall cause the name of the purchaser thereof to be plainly written or stamped thereon before delivering the same; and no person other than such purchaser shall use any of said forms bearing the name of such purchaser for the purpose of procuring any of the aforesaid drugs, or furnish any of the forms bearing the name of such purchaser to any person with intent thereby to procure the shipment or delivery of any of the aforesaid drugs. It shall be unlawful for any person to obtain by means of said order forms any of the aforesaid drugs for any purpose other than the use, sale or distribution thereof by him in the conduct of a lawful business in said articles, or in the legitimate practice of his profession.

Sec. 3. That any person who shall be registered in any internal revenue district under the provisions of section one of this Act, shall, whenever required so to do by the Collector of the District, render to the said Collector a true and correct statement or return, verified by affidavit, setting forth the quantity of the aforesaid drugs received by him in said internal revenue district during such period immediately preceding the demand of the Collector, not exceeding three months, as the said Collector may fix and determine; the names of the persons from whom the said articles were received; the quantity in each instance received from each of such persons, and the date when received.

Sec. 4. That it shall be unlawful for any person who shall not have registered and paid the special tax as required by Section one of this Act to send, ship, carry or de-

liver any of the aforesaid drugs from any State or Territory or the District of Columbia, to any person in any other State or Territory or the District of Columbia; *Provided,* That nothing contained in this section shall apply to common carriers engaged in transporting the aforesaid drugs; or to any employe, acting within the scope of his employment, of any person who shall have registered and paid the special tax as required by section one of this Act; or to the written prescriptions of physicians, dentists and veterinary surgeons who have registered under this Act to those who are under the immediate personal care of such physicians, dentists and veterinary surgeons.

Sec. 5. That the duplicate order forms and the prescriptions required to be preserved under the provisions of Section two of this Act, and the statements or returns filed in the office of the Collector of the district, under the provisions of Section four of this Act, shall be open to inspection by officers, agents and employes of the Treasury Department duly authorized for that purpose; and such officials of any State or Territory, or of any organized municipality therein, or of the District of Columbia, as shall be charged with the enforcement of any law, or municipal ordinance, regulating the sale, prescribing, dispensing, dealing in, or distribution of the aforesaid drugs. Each collector of internal revenue is hereby authorized to furnish, upon written request, certified copies of any of the said statements or returns filed in his office to any of such officials of any State or Territory or organized municipality therein, or the District of Columbia, as shall be entitled to inspect the said statements or returns filed in the office of the said Collector, upon the payment of a fee of one dollar for each one hundred words or fraction thereof in the copy or copies so requested. Any person who shall disclose the information contained in the said statements or returns, or in the said duplicate order forms, except as herein expressly provided, and except for the purpose of enforcing the provisions of this Act, or for the purpose of enforcing any law of any State or Territory or the District of Columbia, or ordinance of any organized municipality therein, regulating the sale, prescribing, dispensing, dealing in, or distribution of the aforesaid drugs shall, on conviction, be fined or imprisoned as provided by Section nine of this Act. And collectors of Internal Revenue are hereby authorized to furnish, upon written request, to any person, a certified copy of the names of any or all persons who may be listed in their respective collection districts as special taxpayers under the provisions of this Act, upon payment of a fee of one dollar for each one hundred names or fraction thereof in the copy so requested.

Sec. 6. That the provisions of this Act shall not be construed to apply to the sale, distribution, giving away, or dispensing of preparations and remedies which do not contain more than two grains of opium, or more than one-fourth of a grain of morphine or more than one-twelfth of a grain of heroin, or more than one grain of codeine or any salt or derivative of any of them in one fluid ounce; or. if a solid or a semi-solid preparation, in one avoirdupois ounce, or to liniments, ointments, or other preparations which are prepared for external use only; *Provided,* That such remedies and preparations are sold, distributed, given away, or dispensed as medicines, and not for the purpose of evading the intentions and provisions of this Act. The provisions of this Act shall not apply to decocainized coca leaves or preparations made therefrom, or to other preparations of coca leaves which do not containe cocaine.

Sec. 7. That all laws relating to the assessment, collection, remission, and refund of internal revenue taxes, including section 3229 of the revised statutes of the United States, so far as applicable to and not inconsistent with the provisions of this Act, are hereby extended and made applicable to the special taxes imposed by this Act.

Sec. 8. It shall be unlawful for any person not registered under the provisions of this Act, and who has not paid the special tax provided for by this Act, to have in his possession or under his control any of the aforesaid drugs; and such possession or control shall be presumptive evidence of a violation of this Section, and also of a violation of the last paragraph of Section 1 of this Act; *Provided,* this section shall not apply to any employe of a registered person having

such possession or control by virtue of his employment and not on his own account; or to any of the aforesaid drugs which has or have been prescribed in good faith by a physician, dentist or veterinary surgeon registered under this Act, or by any United States, State, or municipal officer, board or other authority for purposes of investigation, enforcement of law or otherwise; or to a warehouseman holding possession for a person registered and who has paid the taxes under this Act; or to common carriers engaged in transporting such drugs; *Provided further*, it shall not be necessary to negative any of the aforesaid exemptions in any complaint, information, indictment or other writ or proceeding laid or brought under this Act; and the burden of proof of any said exception shall be upon the defendant.

Sec. 9. That any person who violates or fails to comply with any of the requirements of this Act shall, on conviction, be fined not more than $2,000 or be imprisoned not more than five years, or both, in the discretion of the court.

Sec. 10. That the Commissioner of Internal Revenue, with the approval of the Secretary of the Treasury, is authorized to appoint such agents, deputy collectors, inspectors, chemists, assistant chemists, clerks, and messengers in the field, and in the Bureau of Internal Revenue in the District of Columbia as may be necessary to enforce the provisions of this Act.

Sec. 11. That the sum of $150,000, or so much thereof as may be necessary, be, and hereby is, appropriated for the purpose of carrying into effect the provisions of this Act.

Sec. 12. Nothing contained in this Act shall be construed to impair, alter, amend or repeal any of the provisions of the Act of Congress, approved June thirtieth, nineteen hundred and six, entitled, "An Act for preventing the manufacture, sale, or transportation of adulterated or misbranded or poisonous or deleterious foods, drugs, medicines and liquors, and for regulating traffic therein and for other purposes," and any amendment thereof, or of the Act approved February ninth, nineteen hundred and nine, entitled, "An Act to prohibit the importation and use of opium for other than medicinal purposes," and any amendment thereof.

NEW ENGLAND LETTER.

ERNEST C. MARSHALL, Ph. G.

The other day I took a run through one of Boston's beautiful suburbs to get material for use in my letter to the JOURNAL and, invigorated with the pure air and charmed by the peaceful environment and attractiveness of the town, I congratulated one of its knights of the pestle on his surroundings, telling him that many would envy him his location and his life among them. Much to my surprise I found in him one discontented with the very things I thought so admirable. He longed to be in the bustle of the city and a store on Boylston or Tremont streets was the goal for which he was aspiring. Musing on this surprising state of things, it recalled to my mind the thought of how little any one of us knows of what is best for himself, and how often we seek for things that are valueless and not only of no value to us, but those which are positively injurious and harmful.

Shakespeare spoke most truly when he said:

> "We ignorant of ourselves,
> Beg often our own harms
> Which the wise powers deny us
> For our good. Thus find we profit
> From losing of our prayers."

And what is true of individuals is also true of municipalities. Boston has recently passed through an inordinate enthusiasm over the coming of the ships of the Hamburg American Line to the city. As the Cincinnati came up the harbor she was met by boats filled with enthusiastic citizens who waved German and American flags, who sang patriotic songs and shouted themselves hoarse; the air was rent by screaming whistles; a flood of oratory was let loose; thousands of people,—some say fifty thousand,—went to gaze upon the liner and its captain as though she were a veritable Argo and Captain Schaarschmidt another Jason bearing to each and every one a Golden Fleece.

Now it may be assumed that every one of this fifty thousand people is a thinking being and yet it would be hard to determine what it was in the fact of this ship coming to Boston, to warrant such inordinate enthusiasm. Let us ask ourselves calmly what great thing has really been accomplished? Are Boston's citizens to be made more happy, more wise or

more strong by reason of it? It is by these things that we should judge events, rather than by the simple one of "More business." For business may be of two kinds—paying or losing,—and which kind are we sure that this will bring to us. We may be told that of course it will bring a paying business, but even in that event, it may not bring happiness with it. Money-gathering is not at all a certain means of bringing peace to the mind and happiness to the soul.

A certain Shah of Persia once said that he had sat for fifty years upon the throne. In that time he had daily received the homage of princes and nobles and the people of his realm; his will had been their law; his wishes paramount above all; earth, sea and sky were searched to please him; the most beautiful damsels of the empire were his to enjoy, and all bowed before him. During this time when all envied him, he said that he had kept heedful account of the days when he was truly happy and that they only reckoned three in the half century. May we not draw a lesson from this, and be content with the good we have, rather than to imagine the benefits we would enjoy in some other situation?

WAGES AND TRADE SECRETS.

In a suit for damages for violation of contract, recently tried in a British court, a very interesting side-light was thrown upon the difference in the standard of wages of this country and of England.

It appears from an account of this case, as reported in the India Rubber Journal of London, that a man named James Thomas Tuck, a rubber worker, was employed by the firm of Ingram and Son, which firm has the reputation of possessing many trade secrets and improved processes which make it one of the leading firms of the world in the manufacture of surgical rubber.

Tuck was induced by a man named Sinclair,—who, having been a former employe of the Ingram company, knew of Tuck's ability,—to leave Ingram's and enter the service of another company, which proposed to enter upon the manufacture of surgical rubber and desired skilled men to assist them in that enterprise, and a part of the consideration offered Tuck was that he should receive a contract for two year's employment. After Tuck had been employed by the defendant company about six months he was summarily discharged, ostensibly for failing to record all of his operations in detail. He sued to recover damages for violation of agreement, but lost his case because the court decided that his original agreement was modified and superseded by a later one, which abrogated the first agreement.

What is most interesting about this case to Americans is the price which the managers of the defendant company considered as equivalent for the trade-secrets which Tuck was to divulge to them; for informing the company as to very valuable processes, which Tuck had acquired while in the employ of Ingram's for sixteen years, and for his organizing the department for the manufacture of surgical rubber for the defendant company.

For these valuable services it might be expected that Tuck's compensation would be commensurate with the service expected of him, and it is surprising to read that the company considered the sum of £2.5s. per week (about $10.89) as sufficient to pay him for his efficiency and skill.

If it is the free trade policy of England which fixes the compensation for such valuable service at this meagre price, the less we have of it in America the better for all workingmen, if not for our whole people.

MAINE.

Bangor. Fred D. Wyman has removed from 81 to 171 Exchange St. into a much more commodious store, which is almost directly opposite the Bijou Theatre.

Houlton. Mr. W. H. Ormsby has been admitted to the firm known as the Cochran Drug Store.

Portland. The forty-sixth annual meeting of the Maine Pharmaceutical Association was held at Peak's Island on Wednesday, Thursday and Friday,—June 25-27,—and was a most successful occasion, due to the earnest work of the Committee on Entertainment, headed by President E. W. Murphy and the Committee on Transportation under the direction of Secretary, Dr. M. L. Porter.

Belfast. The name of the Diptherine Medicine Co. was changed to that of The Rogers Chemical Co. of Boston at a meeting held on June 2. The old board of officers was re-elected.

NEW HAMPSHIRE.

Franklin. The Griffin Drug Co. has been organized with a capitalization of $12,000.

Manchester. Mr. Paul H. Boire, of Manchester, has been appointed a member of the

Board of Pharmacy to succeed Mr. A. S. Wetherell of Exeter. Mr. Boire has been connected with the profession in Manchester for twenty-eight years, beginning his experience in the store of which he is now the proprietor under the tutorship of Col. John B. Hall.

VERMONT.

Brandon. The annual meeting of the Vermont Association occurred at this place during the week of June 24. Professor Charles F. Nixon of Leominster was the special guest of the occasion and delivered an address at one of the sessions. Among the other visitors present was Prof. Elie H. LaPierre of the Massachusetts College of Pharmacy, who made the meeting an objective point on an automobile tour through Western Massachusetts, New Hampshire and Vermont.

MASSACHUSETTS.

Boston. George R. White, Esq., the President of the Potter Drug and Chemical Co., has given $30,000 to assist the work of the Gray Herbarium of Harvard College.

A seven-year-old child died on May 29 from eating tablets said to be put up under the name of Dr. Edward's Olive Tablets. The cause of death was stated by the authorities to be poisoning from strychnin and belladonna, although there is no mention of these toxic substances on the label of the preparation. The Medical Examiner will confer with the District Attorney as to the case and endeavor to prevent any repetition of it in this city.

William A. Chapin, Ph. G., formerly a prominent Boston druggist died on June 4 at his home in Natick, at the age of 57 years. Mr. Chapin formerly conducted a drug-store under the United States Hotel, and was at one time connected with Charles P. Jaynes in the management of the Jaynes Drug Co.

"Green, the Druggist, Inc.," have leased the store on the ground-floor and the basement of the building now in process of erection on the corner of Tremont Row and Howard Street. This firm now conducts stores in the cities of Springfield, Worcester and Holyoke, conducted on what is known as "the modern plan."

The Eastern Drug Co. base ball team displayed their new uniforms at their game on Saturday, June 14, and while it is accepted as an axiom that "the clothes don't make the man," yet the natty uniforms seemed to put some "gimp" into the nine. They are not afraid to tackle the tail-enders of any old league.

At the annual meeting of the Massachusetts College of Pharmacy held on the second of June last, Messrs. Estabrook, Briry and Piper were elected as Trustees for a term of five years, and Prof. A. W. Balch was elected to succeed Mr. George E. Grover, resigned, for a period of two years. The report of the Treasurer and the Trustees of Invested Funds showed a most excellent condition of the college financially and the report of the Dean, Theodore J. Bradley, displayed an equally satisfactory condition on the educational side.

A most pleasant function took place in Malden, Mass., on the evening of June 4th when there occurred at the home of the bride's parents the wedding of Edith B. Pease and Robert Albro Newton, Ph. D., a former instructor of the M. C. P., and now an analytical chemist and druggist of Southboro and a Trustee of the College of Pharmacy. The bride and groom will be remembered by many who attended the A. Ph. A. meeting at Denver last year as members of the New England delegation. The ceremony was solemnized by the Rev. George Bullen, who, 31 years ago, married the bride's parents. Mrs. Newton was formerly the Dean's assistant at the College of Pharmacy and among those in attendance at the wedding were many of the Trustees and Faculty of that institution.

The meeting of the Massachusetts State Pharmaceutical Association was held at the Ocean House, Swampscott, during the week of June 24. The principal guest of the association was Mr. Thomas H. Potts, the Secretary of the N. A. R. D. A full report of the meeting will be given in our next issue.

Mr. Ernst O. Engstrom, former President of the Associated Boards of Pharmacy and a Trustee of the M. C. P., sailed from this port June 3, with Mrs. Engstrom, for an automobile tour of Europe. He will return to this country about the first of September, sailing from Naples, Italy.

Bridgewater. The H. H. Dudley & Co. corporation opened their new store in the Keith block on May 24. The equipment of the store is modern throughout. The firm being one of the members of the Druggists' Manufacturing Association will carry their lines of cigars and candy.

Chelsea. A woman named Lilian M. Lish has been before several of our courts for obtaining cocaine by means of forged prescriptions bearing the names of Lynn physicians. After being fined and admonished by several judges she has now received a sentence to the Woman's Prison for an indeterminate term in the hope that a rigid seclusion from temptation and opportunity may effect a cure in her morbid tendency for that drug.

Holyoke. Mr. and Mrs. L. G. Heinritz celebrated the silver anniversary of their wedding day on Friday, May 23 last, at their home on Washington Avenue, and were the recipients of many congratulations and gifts from their many friends. Mr. Heinritz is a Vice President of the American Druggists' Fire Insurance Co., but is best known among the trade as the Nestor of Western Massachusetts Pharmacy.

Leominster. Mr. Frank J. Pierson has been quite sick in the St. Vincent's Hospital at Worcester, Mass.

Lowell. Mr. Dennis A. O'Brien, for 36 years a druggist of this city, died on May 24. For many years he conducted a pharmacy in Centralville. He leaves a wife, two sons, one the Rev. Dennis O'Brien, recently ordained in Rome, and two daughters.

North Adams. The Wilson House Drug Store reopened its doors on May 24 for the first time since the fire of last July. The store is one of the finest in the western part of the state, one of its most ornamental features being a handsome fountain from the firm of Lippincott & Co said to be the finest installed in New England this year.

Pittsfield. John Noonan has bought an interest in the Noonan drug-store and will become a junior partner in the firm of which P. H. Dineen is the senior member.

Salem. James E. Fitzgerald has purchased the store of the late Thomas B. Nichols and will consolidate his former store with the Nichols business at the stand of the latter.

Sheffield. George Scott opened a new drug-store in the Little Block during the week of May 26. The fixtures were the product of the well-known firm of Charles P. Whittle Manufacturing Co. of Boston. They are of quartered oak and glass.

Somerville. The store of the J. Arthur Bean Drug Co. was entered by thieves on the night of June 2 and about forty dollars' worth of goods was stolen. No clue has been obtained to the burglars.

Stoneham. William F. Gordon, a veteran druggist, who conducted a drug-store in Central Sq. for thirty-nine years, died on June 8, at the age of 74 years. He observed his golden-wedding last month.

Worcester. James F. Guerin and Peter B. Moriarty have been selected as delegates to the N. A. R. D. Convention at Cincinnati in August.

Mr. Tilsworth Bushnell and Miriam Howard were married on June 7 at the home of the bride's parents in Hyde Park. Mr. Bushnell is well-known as a drug-buyer for Brewer & Co. of this city.

CONNECTICUT.

Bridgeport. The Hindle Company of this city have installed one of the most complete soda-fountains of the American Soda Fountain Co. which that company have ever turned out. It is composed of marble and onyx, with a French beveled mirror sixteen feet long.

Hartford. The annual meeting of the Rexall Club of Rhode Island and Connecticut was held at the Hotel Garde on May 20, with thirty-five members in attendance.

The Sisson Drug Co. are to erect a four-story warehouse, extending ninety feet from the rear of their Main Street building.

The Alderman Drug Co. has leased the building on the corner of Main and Pearl Streets, now occupied by the Connecticut River Banking Co. The lease is for the term of ten years and the rental is $8,500 a year.

Greenwich. An empty Blau gas-tank exploded in the rear of Finch's drug store on June 5 from exposure to the sun's rays, the clerk having forgotten to open its safety valve and let the pressure escape. Fortunately no one was in the locality at the time and no great damage was done.

New Haven. Mr. James Moran has purchased the interest of George Kenyon in the firm of Kenyon & Co. Messrs. Kenyon and Morgan have been associated in business for the past two years. Mr. Kenyon is soon to take up his residence in Tennessee.

MEN YOU WILL MEET IN NASHVILLE AT THE A. PH. A.

About the first familiar face you will see after arriving at Nashville will be the smiling countenance of the A. Ph. A.'s Local Secretary. That old war horse of the Association, Dr. J. O. Burge, who has been an active member in the ranks since 1879, and whose attendance at many of the annual meetings has caused him to have a wide acquaintance with druggists all over the U. S.

Dr. Burge ran a retail drug store in Bowling Green and later in Nashville for many years, was the first Secretary of the Tennessee Board of Pharmacy, was President of the Tennessee Pharmaceutical Association and now is manufacturing Chemist for the wholesale firm of Berry, Demoville & Co.

Dr. E. A. Ruddiman, Chairman of the General Arrangement Committee, will be "Johnny on the spot," and will give the glad hand to many of his old acquaintances whom he has met at the annual meetings. He has had a smile on his face ever since he heard that Nashville will be the host for the A. Ph. A. this year, and the closer it gets to August 18th the broader the smile gets. Dr. Ruddiman is Professor of Pharmacy and Materia Medica in the Pharmacy Department of Vanderbilt University and is Chemist in the U. S. pure food service.

Dr. J. T. McGill, Professor of Organic Chemistry at Vanderbilt, will be on hand and will be recognized by many of the visitors who have seen him in battle waged at the annual meetings in his efforts to unify pharmaceutical degrees, and to raise the requirement for entrance to schools of Pharmacy.

Mr. Charles S. Martin, ex-President of the National Wholesale Druggists' Association, whose genial manner and affable disposition has given him a popularity in drug circles that is nation wide, will be in prominence. Mr. Martin is manager of the wholesale drug firm of Spurlock Neal Co., and has a high regard for the members of the A. Ph. A. He is working like a Trojan to give them a royal southern welcome.

Mr. Clarence C. Young, chairman of the Druggists' Reception Committee, is a courteous, big-hearted enthusiast, who will handle his committee in such a manner that every member can count on his assistance from the time they enter the depot until they leave the "City of Opportunity." He is a member of the up-to-date firm of Young & Thompson, corner Church and Eighth avenue north.

Mr. Jerome B. Sand, chairman of the Hotel Committee, will show the members what fine hotel arrangements his committee has been capable of making. Mr. Sand is a member of the Tennessee Board of Pharmacy and is a partner in the firm of Sand & Sumpter Drug Co., which operates a store in the Hermitage Hotel and one at the busy corner of Union and Fifth avenue N.

Major Ernest Hutton, one of the livest wires in the city, is the man who is chairman of the Finance Committee, which will secure ample funds to entertain the Association. Mr. Hutton is the proprietor of two prosperous retail stores in Northeast Nashville, and has served as a member of the Tennessee Board of Pharmacy and as president of the Tennessee Pharmaceutical Association.

Ira B. Clark will be very much in evidence. He is a splendid mixer and will leave no stone unturned to make the visting members have a pleasant week here. As chairman of the Membership Committee he has caused a healthy growth of the A. Ph. A. here and over the South. He is secretary of the Tennessee Board of Pharmacy, and owns an up-to-now pharmacy at the corner of Fifth and Woodland streets.

One of the livest wires and finest workers that ever came down the pike is D. J. Kuhn. He is a great N. A. R. D. worker, having attended many of the annual meetings, and will give the glad hand to A. Ph. A. members here. He owns a very prosperous store at the corner of Cedar and McNairy streets.

S. C. Davis, who operates two stores in the city, is a prominent A. D. S. and N. A. R. D. worker and ex-president of the Tennessee Pharm. Association.

Will Phillips, who is showing great ability as manager of the old firm of Berry, Demoville & Co., will give the glad hand to all A. Ph. A. members.

Max Bloomstine, who runs a swell pharmacy on Church street, is a good druggist and a member of the A. Ph. A.

Among the many others there will be at the meetings: Gus Blodau, A. J. Martin, Dan Lenehan, L. J. Pully, W. Y. Waldrum,

R. L. Eves, W. E. Harrison and Steve Moore, all owners of suburban stores.

The following traveling men will be on hand at this pharmaceutical love feast, and show the visitors what Chesterfields they have down here: V. A. Coleman, Harry Eskew, John Godwin, Earl Kemper, R. R. Phillips, A. A. Yeager, Abe Caruthers, Dr. Knott, J. W. Bass, Ed. Gilliland, Dr. J. R. McDaniels, Lucian Weakley, J. W. McMurry, John McGavock, Brice Hughes, Edwin Smith.

It is hardly necessary to add that the writer, in his capacity as chairman of the Entertainment Committee, will be ever present to cordially welcome all and to renew again the many acquaintances he has made at the several annual meetings he has attended and at the last Pharmacopoeial Convention in Washington.

WILLIAM R. WHITE, Ph. C.

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MISSOURI'S NEW FOOD COMMISSIONER.

Frederick H. Fricke, who was recently appointed State Food and Drug Commissioner of Missouri, as announced in a late issue of *The American Food Journal*, is a native of St. Louis, and was born on April 4, 1873. He attended the public schools of the city, and subsequently the College of Pharmacy, where he graduated as a druggist. Mr. Fricke has a practical experience of the drug business and was President of the well-known firm of Fricke-Hahn Drug Company, which owned and operated over twenty drug stores in the city of St. Louis. During his twenty-five years' experience in the business he has mastered every detail of it, and is regarded as one of the most expert druggists in St. Louis.

He is a member of the American Pharmaceutical Association, Missouri Pharmaceutical Association, and the Retail Druggists' Association, and has been active in all of these bodies. In 1897 Mr. Fricke married Miss Willig, of Alhambra, Ill., and has one daughter. He has always taken a keen and active interest in public affairs, both in civic and improvement associations.

A law was recently passed in the legislative assembly changing the office of the Pure Food and Drug Commissioner to St. Louis, and Mr. Fricke is now located in the La Salle building in that city. He is devoting himself with assiduity to mastering every detail of the business of the department, and is engaged in prosecuting a vigorous crusade against the sale of impure foods and drugs, demanding a thorough compliance with the provisions of the food and drug act. He has announced as part of his policy in managing the department that all persons liable to come within his jurisdiction will be given fair and courteous treatment, and so far as he can accomplish they will be informed of what the law requires them to do in the sale of food and drugs, so as to avoid the necessity of prosecution, except in cases where the circumstances imperatively demand it.

When asked as to his purposes and intentions in carrying out the details of the department, Mr. Fricke said, "I have accepted this appointment at the hands of Gov. Major, not because of the salary which is inadequate, having regard to the responsible duties attached to the position, but because I believe that this is one of the most important departments in the government of the state, and it can be made a valuable agency in promoting the health and welfare of the masses of the people. Before I accepted this appointment, I had studied pure food and drugs, and am glad to have the opportunity of carrying some of my ideas into effect. The pure food and drug business is still in its infancy—it has only passed its experimental stage, and there are many defects to be removed, and additions to be made to the law before the highest efficiency can be obtained in the administration of the affairs of the department. I expect to have some recommendations to make to the next legislature, but in the meantime will endeavor to give an administration of the affairs of the office which I hope will be satisfactory to the citizens of this state without reference to party affiliations."—*The American Food Journal.*

Report on the Progress of Pharmacy

For the Year 1912

(Thirteenth Installment.)

Iron Albuminate.—W. Grüning, of Riga, in an extensive paper, gives the chemistry, describes the official solutions, the position of the iron albuminate among the other official iron preparations, and ferrialbumin and ferrialbumin acid. For particulars the original paper must be consulted. The author lays special stress upon the fact that the Dieterich formula, using the dry egg albumin, produces a far superior and more stable material than the formula of the new German Pharmacopoeia, which employs 7.5 percent of fresh egg albumin instead of 3.5 percent of the dry albumin. He also finds that 75 parts of fresh egg albumin only represent 9 parts of dry albumin and that consequently the present solution of iron albuminate is weaker than the old one.—Ph. Zhalle, 1912, No. 44, 45. (O. R.)

Milk: Oxydases, Catalases and Reductases.—Dr. A. Splittgerber, of the Chemical Division of the Hygienic Institute of Dr. M. Neisser, Frankfurt, has made a detailed study of these agents and has reached the following conclusions:

I. The oxydases and peroxydases are present in variable quantities in the milk of different mammalia. Peroxydases can be determined in cow's milk which is not heated beyond 80° C. Arnold's reagent, that is tincture of guaiac, when fresh, is active without hydrogen peroxide. Storch's reagent, that is paraphenylendiamin and hydrogen peroxide, is not active in milk containing preservatives. Rothenfusser's reagent, consisting of an alcoholic solution of paraphenylendiaminchlorhydrate and guaiacol, when added to the lead acetate serum of milk in the presence of hydrogen peroxide, is so sensitive as to detect 1 part of raw milk in 1000 parts of boiled milk.

II. Catalases have the property of decomposing hydrogen peroxide into water and molecular oxygen, which latter can be collected and measured in a specially constructed apparatus. The origin of catalases are still undetermined and are either caused by micro-organisms or enzymes.

III. Reductases have the property of decolorizing methylene blue, either with or without formaldehyde. For further particulars the original voluminous paper must be consulted.—Ph. Zhalle. 1912, 46-51. (O. R.)

Ointment of Colloidal Silver.—The proper preparation of Unguentum Argenti Colloidalis of the new German Pharmacopoeia has caused a great deal of discussion. R. Richter states that it is an entirely wrong procedure to pulverize the colloidal silver and then mix it with the ointment. It is highly important to add the same amount of distilled water as there is colloidal silver and leave the mixture standing in a mortar until it is spongy. The mixture is then thoroughly triturated and the ointment base added.—Ph. Zhalle. 1912, 46, 1305. (O.R.)

Soap Hand Paste.—The following formula is recommended:

Soft soap	80 parts
Ammonia water	5 parts
Pumice in powder	31 parts
Oil of Turpentine—a sufficient quantity to form a soft paste.	

This can be filled in boxes and also in collapsible tubes.—Ph. Zhalle. 1912, 46. 1312. (O. R.)

Cremulae, or Chocolate Creams.—Sir James Saroger has thus named medicinal chocolate creams. The "cream" is prepared by evaporating a mixture of sugar and milk to the consistency of paste. Different medicaments can be incorporated into this paste, which is covered with chocolate in the popular chocolate cream drop.—Ph. Zhalle. 1912, 50. 1427. (O. R.)

Benzin and Kerosene: Differentiation.—Prof. Dr. Holde and Dr. Ubbelohde, two authorities in petroleum chemistry, consider the flash point as the most important for the differentiation between benzin and kerosene.

Great confusion seems to exist, quite especially as of late a great many fractional distillates have come into the market. The authors consider that the product having a flash point above 21° C. should be named kerosene or petroleum.—Ph. Zhalle. 1912. No. 50, 1429. (O. R.)

Milk: *Acidity.*—Fresh milk has an alkaline reaction with helianthin and lacmoid, an amphoteric reaction with lacmus and an acid reaction with phenolphthalein. F. Bordas and F. Touplain have shown that the acid reaction of milk when phenolphthalein is used as an indicator depends upon the free casein. The same authors have also proven that fresh milk does not contain any free acids, as lactic or citric acid, or any acid salts.—Annal. Falsific. 4, 1911, 297. (O. R.)

Pyrogallol: *Oxidation by Hydrogen Peroxide.*—If a mixture of 10 cc. of a 10 percent solution of pyrogallol and 20 cc. of a 40 percent solution of potassium carbonate and 10 cc. of a 35 percent solution of formaldehyde are added to 500 cc. of a 30 percent solution of hydrogen peroxide contained in a capacious vessel, the oxidation takes place so rapidly that flames are evolved.—Farm. Notisbl. 1912, Nr. 10. (O. R.)

Methyl Alcohol: *Detection in Alcohol.*—C. Nakai recommends the following: A mixture of 3 cc. of the liquid, 2.5 gm. ammonium persulphate and 8 cc. of a 20 percent sulphuric acid is diluted with water to 50 cc. and is then distilled. Five distillates of 5 cc. each are collected separately and two drops of Fuchsin-sulphuric acid are added and also 2 cc. of a solution of Stannostannic chloride. The more methyl alcohol present, the deeper will be the blue or violet blue color. With this test methyl alcohol can be detected if present 1 in 10,000.

The Fuchsin-sulphuric acid solution is prepared by mixing 50 cc. of a saturated sodium bisulphite solution with a solution of 1 gm. of Fuchsin in 1 Liter of water, acidified with 1 cc. of concentrated sulphuric acid.—Yakugakuzasshi, 1912, Nr. 364. (O. R.)

Albumin: *History of the Reagents.*—Beta-Napththalene-sulphuric acid was proposed as a reagent by E. Riegler in Jassy, and is so sensitive as to detect one part of albumin in 40,000. Sulphosalicylic acid, or salicyl-sulphonic acid, was proposed by MacWilliam and detects as little as one part of albumin in 130,000 parts of urine. Sulphosalicylic acid was discovered by Auguste Cahours in 1843 and further researches were made by O. Mendius in the chemical laboratory at the University of Göttingen. Since 1889 it has been manufactured on a large scale by Von Heyden. A test paper has also been introduced, but has been found to deteriorate. As a reagent for albumin in urine, it was introduced by MacWilliam and approved by Emil Fischer.—Ph. Zhalle, 1912, 1145. (O. R.)

Acetone-Alcohol.—According to *Merck's Annual Report* (1911), this is a mixture of 30 parts acetone and 70 parts alcohol 95 percent. It possesses highly disinfectant and antiseptic properties and is used for cleansing hands or wounds.—Ph. Zhalle, 1912, 1162. Editor's Comment: Great caution should be exercised when this mixture is called for by physicians or on prescriptions. It has been the habit of some druggists to label purified deodorized methyl alcohol as *Acetone Alcohol,* which, however, is a wrong name, as Columbian spirit, etc., is entirely free from acetone. This is another proof that methyl alcohol in any form should be labeled "Poison," and that it should not be mislabeled "Acetone Alcohol," which, according to the abstract, is an entirely different article. (O. R.)

Bismuth Soap: *A New Cosmetic.*—E. Wagner proposes the following method: A mixture of cacao butter and wool fat are heated to 50° C. and when cooled to 32° C. a soluton of sodium hydroxide is added to it in a thin stream with constant stirring. The bismuth salt, either the subnitrate or subgallate, is then added, together with the necessary perfume and the entire mass is kneaded until it cools.—Ph. Zhalle, 1912. 50, 1429. (O. R.)

Insect Powder.—E. Jüttner and P. Siedler, after a visit to Dalmatia and Montenegro, delivered several lectures before the Deutsche Pharmazeutische Gesellschaft in Berlin. The best insect powder is obtained from the closed flower heads of *chrysanthemum cinerariaefolium,* while the open flower heads produce a less valuable powder. The three chief adulterants of insect powder are stems, other similar flowers and coloring. The moisture, according to Dietz, is from 3.42 to 9.85 per cent. The ash content of the closed flowers seems to be more than that of the open flowers and varies, according to Dietze,

between 6.65 to 8.34. The extract content, according to Thoms, is 4 to 6 percent, according to Dietze, 4.35 to 7.72, and according to Caesar and Loretz, 6 to 9.5 percent. The paper is illustrated with microscopic slides of the powder from the flower heads and also that of the stems.—Ph. Zhalle. 1912. 50, 1431 to 1435. (O. R.)

German Pharmacopoeia: Comments.—Dr. A. Schneider and R. Richter have presented a very valuable contribution to pharmaceutical literature in their comments on the fifth edition of the German Pharmacopoeia, which were published in installments in the *Pharmazeutische centralhalle* during 1912. These comments have also been published as reprints, which are printed on one side of the paper only, and which can be used as a supplement to the Handkommentar and Schneider and Süss. (O. R.)

Rennin: Laboratory Studies Of.—In a study of the properties of rennin, prepared by different methods, A. Zimmerman states that rennin prepared by precipitation with sodium sulphate has a strength of 1:30,000 to 1:40,000 in 12 min., while that prepared with sodium chloride 1:150,000 to 1:200,000 in 12 min.

Scale rennin prepared with a strength of 1:30,000 to 1:40,000 is prepared by scaling the clarified solution of the whole rennets at a temperature not exceeding 110° F.

Commercial rennin comes in two forms: (1) Powdered, prepared from the Na Cl product and diluted with sugar of milk to test 1:30,000 to 1:40,000 in 12 min.; (2) Granular rennin, prepared from the scales and which tests the same as the powdered.

The permanency of the rennin in solution seems to be dependent upon phosphoric acid, which probably exists in the rennets as a calcium salt.

The addition of .075 percent of phosphoric acid to milk greatly increases the activity of the rennin, much more so than lactic, hydrochloric, or oxalic acids.—Journ. Ind. and Eng. Chem., July, 1912, Vol. 4, p. 508. (L. A. B.)

Alkaloids: Micro Chemical Identification of.—E. B. Putt states that morphine, codeine, dionin, atropine, cocaine, b. eucaine, nicotine, antipyrin, strychnine, and heroin form characteristic crystals when treated with either iodine, platinic chloride, or palladous chloride.

Putt's method of procedure is to transfer by means of a teasing needle, a small fragment of the alkaloid to a perfectly clean glass slide, dissolve it in a drop of N/10 HCl, then add from a dropping bottle a drop of the appropriate reagent, then examine under microscope at once.

Photomicrographs are given showing characteristic forms of crystals.—Journ. Ind. and Eng. Chem., July, 1912, Vol. 4, p. 508. (L. A. B.)

Aromatic Sulphuric Acid: Improved Method of Assay for.—L. A. Brown states that the U. S. P. method for this preparation does not give reliable results, and gives an improved method for the assay of same.

A sample of about 10 gms. is diluted to 100 cc. with water, 10 cc. aliquots are titrated with N/10 KOH and phenolphthalein, which gives the "total acidity," due to free sulphuric and ethyl sulphuric acids.

The neutralized sample is then diluted to about 100 cc., heated to boiling and 2 cc. conc. hydrochloric acid added, followed by an excess of barium chloride.

From the amount of barium sulphate found is calculated the percent of "free sulphuric acid" and also the equivalent amount in cc. of N/10 H_2SO_4. This figure is subtracted from the "total acidity" and the difference multiplied by two, then calculated to percent of sulphuric acid as "combined sulphuric acid."

Total sulphuric equals "free" plus "combined sulphuric."

It was found that in the U. S. P. method all the ethyl sulphuric acid is not completely hydrolized by four hours' heating, and that even after eight hours' boiling, some remained undecomposed. Also that ethyl sulphuric acid is decomposed to a greater extent in concentrated solution than in dilute solution.

The formation of ethyl sulphuric acid in this preparation appears to be a time reaction and apparently comes to an equilibrium with 1 part of the acid as free sulphuric and 2 parts as ethyl sulphuric.—Journ. Ind. and Eng. Chem., July, 1912, Vol. 4, p. 512. (L. A. B.)

Camphor: Spirit of—Method of Assay.—A. T. Collins suggests that Spirit of Camphor may be accurately assayed by the following method:

Polarize in a 200 mm. tube, making correction for temperature, 1/2 mm. for each degree C., adding if above 20° C., deducting if below.

Place 50 cc. or more in evaporating dish and evaporate to dryness on water bath, stirring with glass rod at end to get camphor dry as possible. When quite dry place on watch glass, cover with small funnel and carefully sublime.

Dissolve 2.5 gms. of the sublimed camphor in sufficient alcohol to make 25 cc. and polarize as at first. This is called the "control."

The percentage is found by dividing the minutes of rotation of the control into the original reading, and then multiplying by 10. —Journ. Ind. and Eng. Chem., July, 1912, Vol. 4, p. 514. (L. A. B.)

Opium: Suggested Modifications in the Assay of.—Mr. R. Norris Shreve states that the U. S. P. method of assay for opium gives inaccurate results, due to (1) incomplete extraction of the opium, (2) retention of morphine by the mother liquor during precipitation, (3) inaccuracies in the lime water method for determination of the impurities in the precipitated morphine.

Shreve suggests that in view of the difficulty of extracting opium by the U. S. P. method (only about 2/3 of the morphine present being removed by gentle mechanical shaking for 8 hours, on three out of four samples) that a test for the completeness of extraction be given in the U. S. P.

It was found that considerable morphine is retained by the mother liquor in the U. S. P. method, and a table is given showing the amount retained at different temperatures. It was also found that the extractive matter in the mother liquor serves to hold back more morphine than is represented by the solvent action of the solvents themselves.

It is suggested that the purity of the crude morphine be determined by the Mallinckrodt re-assay method.—Journ. Ind. & Eng. Chem., July, 1912, Vol. 4, p. 514. (L. A. B.)

Papain: Determination of the Digestive Value of.—J. R. Rippetoe submits the following method as a means of determining the digestive power of papain.

Prepare egg albumen as directed under pepsin assay U. S. P. 8th revision. Introduce into a 4-ounce wide-mouth flint bottle 40 cc. of a 0.1 percent sodium hydroxide solution and add 10 grams of the disintegrated albumen; stopper the bottle and shake vigorously until the albumen is broken up.

Then add the papain in fine powder and mix by shaking 15 seconds. Place the bottle in a water bath previously heated to 52° C. and digest at this temperature for 6 hours, removing bottle every 10 minutes and shaking gently for 15 seconds. At the end of this period, transfer the mixture to a 100 cc. grad. stoppered cylinder, rinse the bottle with water, add rinsings to the mixture and make the volume up to 70 cc. with water.

Allow to stand for one hour, then read off volume of the desopit, take second reading after standing 16-18 hours, which seems to give more positive results.

It was found that some digestion took place in 0.1% HCl but that 0.2 or 0.3% HCl inhibits the action.—Journ. Ind. and Eng. Chem., July, 1912, Vol. 4, p. 517. (L. A. B.)

Formic Acid: The Detection of in Fruit Products.—F. L. Shannon, in commenting upon the use of formic acid as a preservative of fruit products, suggests the following method of procedure as a means of detecting formic acid in such products.

Place 200-500 cc. of the syrup or crushed fruit in a two liter, long-necked, round-bottom flask, provided with a Reitmeier bulb, add 50-100 cc. water, and distill over by means of steam, about 2500 cc. distillate, or until distillate ceases to react acid to litmus. Neutralize the distillate with N/1 NaOH, using litmus as an indicator. Evaporate to about 50 cc. and transfer to an Erlenmeyer flask, provided with a reflux condenser, add a few pieces of pure magnesium wire and a slight excess of dilute sulphuric acid and set in a cool place for one hour, adding more sulphuric acid if necessary.

Transfer liquid to suitable distilling flask, and collect the first ten cc. of the distillate and apply tests for formaldehyde.

As an additional means of detection, it is recommended that the lead salt of formic acid be formed and isolated and subjected to appropriate tests for identification.—Journ. Ind. and Eng. Chem., July, 1912, Vol. 4, p. 526. (L. A. B.)

Prussian Blue in Tea: The Detection of.—Fred West submits the following test as a means of detecting Prussian Blue in tea:

Grind about 15 gms. of the tea in a mortar until it passes through a No. 20 seive.

Place thin, smooth filter papers, 11 cm. in diameter, on glass plates and moisten each filter paper with solution oxalic acid, removing any air bubbles from under paper.

Sprinkle the ground tea leaves over the filter papers, being careful not to sift the tea so thickly that the particles of tea over-

lap. Allow the filters to dry on the plates in the air, brush off the particles of tea leaves with a stiff brush, when, if the tea be colored with Prussian Blue, it will be indicated by bright blue spots upon the filter.—Journ. Ind. and Eng. Chem., July, 1912, Vol. 4, p. 528. (L. A. B.)

Phenol: Rapid and Accurate Methods for Determining.—L. V. Redman and E. O. Rhodes have made a study of the bromide-bromate and the hypobromite methods for the determination of phenol, endeavoring to shorten the time required for the assay and comparing the hypobromite method with the bromide-bromate method for accuracy, ease of manipulation, and time required for the determination.

As a result of their work they state that both methods are capable of reaching an accuracy of only 0.3% error, and that the reaction period may be reduced from 30 minutes to 1 minute of continuous shaking, after adding the bromine, without sacrificing accuracy.

However, it is necessary to shake for at least 3 minutes after adding the KI solution, otherwise an error of 0.5%, due to this cause alone, will occur.

The bromide-bromate solution was found to be much more stable than the hypobromite solution, and is also free from the odor of bromine.—Journ. Ind. and Eng. Chem., Sept., 1912, Vol. 4, p. 655. (L. A. B.)

Vanillin: Difficulties in the Colorimetric Estimation of.—W. S. Hubbard states that the A. O. A. C. method for the colorimetric method of determining vanillin does not give satisfactory results.

He finds that there is a loss of vanillin when lead cream is used as a clarifying agent, a portion of the vanillin being carried down as a lead salt of the composition of $(C_8H_7O_3)_2$ Pb.

A more intense color is formed if the ferrous sulphate be added, as given in the original method of Moerk's, instead of the bromine water.—Journ. Ind. and Eng. Chem., Sept., 1912, Vol. 4, p. 669. (L. A. B.)

Vanillin: A New Colorimetric Method for the Determination of—in Flavoring Extracts.—Otto Folin and W. Denis have proposed the following method for the colorimetric determination of vanillin in flavoring extracts:

Transfer 5.0 cc. of the sample to a 100 cc. flask and add 75 cc. water, then add 4 cc. of the lead acetate solution and sufficient water to make 100 cc.

The contents of the flask are rapidly filtered and 5 cc. of filtrate placed in a 50 cc. flask, then add 5 cc. of the phosphotungstic-phosphomolybdic reagent, shake, and allow to stand for 5 minutes, then fill to the mark with a saturated sodium carbonate solution. Invert the flask 2 or 3 times, allow to stand for 10 minutes for any precipitate to settle, then filter rapidly and compare the deep blue solution with a standard solution, prepared in like manner, in a Du Bosc colorimeter.

The reagents required are (1) an aqueous solution of pure vanillin, containing in each 10 cc., 1 mg. of vanillin; (2) the phosphotungstic-phosphomolybdic acid reagent, prepared by heating 100 gm. sodium tungstate, 20 gms. phosphomolybdic acid, or molybdic acid (free from ammonia or nitrates), 100 gms. 85% phosphoric acid, and 700 cc. water, and boiling over free flame for one and one-half hours, cool, filter, and make up to 1 liter; (3) a solution of sodium carbonate saturated at room temperature.

Care should be exercised to see that the intensity of color in the standard and sample to be read is approximately the same, also in setting up colorimeter to see that the illumination of both fields is the same, so that comparisons of the standard can be made within at least 0.2 mm.

It is essential that both solutions shall be perfectly clear, otherwise erroneous results will be obtained. The results of several analyses show good comparisons with the more laborious gravimetric official method.—Journ. Ind. and Eng. Chem., Sept., 1912, Vol. 4, p. 670. (L. A. B.)

Benzoic Acid as an Acidimetric Standard.—Geo. W. Morey states that benzoic acid possesses many advantages as a standard in acidimetry, in that its high molecular weight permits of the use of large samples, thus reducing the error of weighing; its stability and lack of hygroscopicity make its use very convenient; the ease of obtaining it in a high state of purity and the simplicity and rapidity of the method make it an excellent material to use as a standard in acidimetry and alkalimetry.

The benzoic acid was purified by recrystallizing twice from alcohol, once from water, and then fractionally subliming in vacuo.

Because of the bulkiness of the sublimed

benzoic acid, its bulk was condensed by placing it in a covered platinum dish and melting by placing in an oven heated to 140° C. When melted, the liquid was poured into a test tube, allowed to solidify, and the stick so obtained broken into pieces of convenient size, and preserved in a glass-stoppered bottle.

To use as a standard, weigh out about 1 gm. of this material, place in a 300 cc. flask, add 20 cc. alcohol, and allow to dissolve. Add three drops of a 1% solution phenol phthalein and titrate with N/10 alkali, and CO_2 being removed from the flask by means of a current of CO_2 free air.

A 7% transformation of the indicator was the end point selected, the effect of the alcohol on the end point being determined by means of a blank experiment.

The results obtained by the above method compared very closely with that obtained by means of standard hydrochloric acids prepared by the distillation method of Hulett & Bonner, the gravimetric silver chloride method, and standard sulphuric acid, standardized gravimetrically by the barium sulphate method, and by the sodium oxalate method.—Journ. Am. Chem. Soc., August, 1912, Vol. 34, p. 1027. (L. A. B.)

Weights and Measures Should Be Guaranteed U. S. P. Standard.—Joseph W. England says that "there is probably no more important need in the pharmaceutical world than the necessity of having accurate and uniform weights and measures, especially measures of volume. It is simply idle to standardize the more potent remedies of the Pharmacopoeia, with the greatest possible degree of accuracy, and then measure them with measures that are not accurately graduated."

In a test of thirty-six eight-ounce graduates of different makers it was found that

1 That not one of the measures were accurately graduated.
2 Some were better than others, but that all were bad.
3 On one graduate the six fl. ounce mark was correct only.
4 On twelve graduates the four drachm mark was the correct measure of six fluid drachms, a variation from the standard of 50 percent.

The standard used in testing these graduates was one fluid ounce=29.5161 grammes of water, weighed in dry air at a temperature of 15° C., barometric pressure of 760 mm., the coefficient of expansion of the glass being assumed to be 0.000025 and the density of the brass weights 8.3, these figures being derived from the original data in use at the National Bureau of Standards of the U. S. at Washington, D. C.

Graduates should be held in a perfectly level position when measuring, with careful observation of the lower meniscus. The narrow cylinder shaped graduates yield more accurate results than the cone-shaped graduates. The use of graduated prescription bottles should be discouraged because they vary greatly in accuracy. The American-made graduates, in accuracy and appearance are superior to those of foreign make and are more likely to be in accord with U. S. P. standards.

He recommends that all graduates should be required to be guaranteed by the manufacturers and should be marked "Guaranteed U. S. P. Standard by ————," and that pharmacists should purchase no goods not so marked, for use in pharmaceutical measurements of volume.—Proc. Penn. Phar. Asso., 1912, pp. 118-120. (E. C. M.)

Saturated Solutions, Proper Method of Making.—J. Leon Lascoff, of New York, gives the following reasons for the delinquencies of pharmacists in the making of true saturated solutions of chemicals, particularly the iodides and bromides:

1. Impurity of the salts, especially the iodides.
2. The careless methods followed in manipulation.
3. Incorrect weights and measures.
4. Working at the wrong temperature.
5. The use of containers of the wrong size.

The most accurate way of making saturated solutions is by weighing both water and the salt, shaking until dissolved and straining. He gives the following table as being approximately correct as to the amount of each salt which is required to make a fluid ounce of a saturated solution at 25° C.

	Grams to make 100 cc.	Grains to make one fl. oz.
Potassii Iodidum.....	99.6	456
Sodii Iodidum.....	127.5	584.3
Strontii Iodidum.....	114.9	526.
Potassii Bromidum....	50.4	230.
Sodii Bromidum.....	72.09	329.
Magnesii Sulphas.....	56.32	260.
Potassii Chloras.....	5.69	26.

—Proc. N. Y. Phar. Assoc., 1912, pp. 320-321. E. C. M.

Antidotes, Suggested Official Table of.—Otto Raubenheimer suggests that a Table of Antidotes, similar to that of the Netherlands Pharmacopœia, should be added to the United States Pharmacopœia.—Proc. N. Y. Phar. Assoc., 1912, p. 324. (E. C. M.)

Chloroform, Quantitative Estimation of, in Chloroform Liniment.—Joseph L. Mayer, New York, reviews the different methods for the estimation of Chloroform in chloroform liniment, finds them lacking and suggests the following as a convenient and satisfactory process for the determination of the chloroform content: Into a test-tube having a capacity of about 85 cc. and about 25 mm. in diameter, place 10 cc. of distilled water and 10 cc. of liniment to be analyzed, accurately measured with a pipette; to prevent bumping a small piece of pumice-stone, which has previously been heated to a white-heat and thrown into water, is added. The test-tube is connected with a Liebig condenser by means of corks and bent tubes. For a receiver use an accurate 25 cc. cylinder graduated in tenths or fifths of a cc. containing five cc. diluted water. It is not necessary to have the condenser-tube come in contact with the water. All that is required is to have it project into the cylinder. By means of a naked flame, quietly distill the chloroform into the water contained in the cylinder. It is easy to know when the chloroform is all distilled by watching the receiving cylinder. As the chloroform distills it sinks to the bottom, then comes a lighter distillate which remains on top and is perfectly clear and then a distillate which forms a milky layer occupying about 1 cc.; after this turbid zone has appeared remove cylinder; stopper it with a sound cork and mix by shaking thoroughly. Then remove the cork and add diluted sulphuric acid (10%) to the 25 cc. mark and shake thoroughly. In a few moments the chloroform will have settled to the bottle in a clear layer and all that remains is to multiply the cc. of chloroform by 10 to obtain the percentage of chloroform in the sample. The entire examination does not require over fifteen minutes.—Proc. N. Y. State Phar. Assoc., pp. 295-296. (E. C. M.)

Formaldehyde, Methods of Assay.—Claude E. Hill of Austin has made a comparative examination of the different modes of assaying formaldehyde and concludes that of the four methods tried that the cyanide method gives the best results. The objection to the U. S. P. method of assay is that other aldehydes interfere with the correct estimation of formaldehyde and that it cannot be used for solutions of less strength than five per cent, but he says it is very adaptable to strong solutions. The objection to the ammonia method is the volatility of the ammonia, and the iodometric method, like that of the U. S. P., is not of service in the presence of other aldehydes. The cyanide method gives accurate results in the presence of other aldehydes or oxidizing agents; and works equally well in dilute or strong solutions, for in using this method strong solutions are diluted. This process is based on the Vohlard Thiocyanate method, which is very accurate.—Proc. Texas. Phar. Assoc., 1912, pp. 85-87. (E. C. M.)

Syrup Ammonii Hypophosphitis.—In a paper entitled "Some Criticism and Comments on the Proposed N. F. Formulas," Dr. P. E. Hommell says that the addition of Compound Spirit of Vanillin to this syrup is apt to make it sickening to susceptible patients and that it is a very acceptable preparation without this addition and further remarks that unless drugs are very bitter, nauseous or acrid, flavoring, sweetening or coloring to the degree found in the N. F. preparations are entirely unnecessary.—Proc. N. J. Phar. Assoc., 1912, pp. 90-96. (E. C. M.)

Quinine, Aromatic Syrup of.—Dr. P. E. Hommell criticizes the enormous waste of Quinine as administered in pill or tablet form, and recommends the following as a most eligible preparation for its administration after an experience of many years with it in his own practice:

Quinine sulphate, one drachm.
Hydrobromic acid dilute q. s. to dissolve.
Tinct. cardamom. co.
Anise water of each, four fl. drams.
Simple syrup to make four fl. ounces.

The use of hydrobromic acid tends to overcome some of the untoward action of the quinine, such as headache, giddiness and tinnitis aurium, with not infrequent impairment of hearing and of sight, and he has never observed, following its use, any cutaneous eruptions which are often the sequelæ of the administration of quinine in concentrated form.—Proc. N. J. Phar. Assoc., 1912, pp. 96-97. (E. C. M.)

Opium Deodoratum.—William K. Ilhardt, St. Louis, says that in preparing deodorized opium, ether dissolves more coloring matter and resins than bezin. Benzin dissolved 8.6 to 9.5% while the ether-soluble matter amounted to 12%. A preliminary test of the ether extract showed but a small amount of morphine present. Attempts to determine the loss of morphine by assay before and after its deodorization were not satisfactory. The averages of two lots are as follows:

Sample A assayed 12.1% before, 13.4% after.

Sample B assayed 12.6% before, 12.84% after.

The relative value of ether and benzin should be thoroughly studied, and should ether be found to dissolve too much of the desirable constituents of the opium and benzin less, then the use of the latter should be continued, on the other hand ether appears preferable since it removes more matter than benzin.—Proc. Missouri Phar. Assoc., 1912, 113-114. (E. C. M.)

Sterilization in the Pharmacy.—Commenting upon the proposition that Methods of Sterilization may be introduced into the new editions of the U. S. P. and N. F., E. Fullerton Cook, Ph. D., describes the equipment required by the pharmacist to dispense sterile solutions and the methods of their preparation While these methods do not cover the whole field of sterilization by the pharmacist they are offered as suggestions and with the hope that pharmacists generally may be encouraged to prepare for this largely-increasing demand upon their skill.—Proc. N. J. Phar. Assoc., 1912, pp. 74-77. (E. C. M.)

Mistura Rhei et Sodae, Improved Formula for.—Adolph P. Marquier suggests a change in the formula for Rhubarb and Soda Mixture, the present formula, in his opinion, containing too much glycerin and too much spirit of peppermint. He suggests the following as an improved formula for this preparation:

Sodium Bicarbonate	35 grams
Potassium Carbonate	3 grams
Fl. Ext. Rhubarb	15 cc.
Fl. Ext. Ipecac	3 cc.
Spt. Peppermint	15 cc.
Alcohol	100 cc.
Glycerin	250 cc.
Water, sufficient to make	1000 cc.

Dissolve the sodium and potassium salts in 500 cc. of water. Add the fluidextracts to the glycerin and alcohol and spirit of peppermint and enough water to make 500 cc. Add this to the above solution and allow it to stand twenty-four hours and filter.—Proc. New Jersey Phar. Assoc., 1912, p. 72. (E. C. M.)

Blaud's Pills, Permanency of.—Charles H. LaWall from an analysis of some carbonate of iron pills said to be at least forty years old, says that the results show that for permanence these pills when properly made are in the highest possible class.—Proc. N. J. Phar. Assoc., 112, pp. 73-74. (E. C. M.)

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BELLES LETTRES AND SANITARY SCIENCE.

An example of how the youth of Indiana combine the pursuit of literature and sanitary science is seen in the accompanying verses, entitled "How It Happened," reprinted from the *Bulletin* issued by the Board of Health of that State, and said to be the product of a Short Ridge High School student.

A fly and a flea,
  A mosquito and a louse,
All lived together
  In a very dirty house.
The louse spread the ague,
The 'skeeter spread the chills,
And they all worked together
  For undertaker's bills.

The fly spread typhoid,
  And the flea spread typhus, too,
And the people in the house
  Were a mighty dirty crew.
Along came a man
  And he cleaned up the house,
He screened out the 'skeeter
  And swatted the louse;
The fly and the flea
  He smacked on the wall,
And now the people in the house
  Are never sick at all.

—D. WHITE.

The Pharmacist and the Law

PATENTEE CANNOT RESTRICT RE-SALE PRICES.

United States Supreme Court in Sanatogen Case, Denies Application of Patent Statute to Sale by Retailer Below Specified Price —Passage of Full Title Left Complainant Remediless — Case Analogous to Book Copyright Decision — Dick Mimeograph Decision Distinguished—Four Justices Dissent.

(Reprinted from the Oil, Paint and Drug Reporter, June 2, 1913.)

The following is the full text of the opinion of the United States Supreme Court in the case of the Bauer Chemical Company against James O'Donnell, a druggist, of Washington, D. C., denying the right of the complainant to control the retail sale price of sanatogen, a patent medicine, as specified on the package. The decision of the court was by five against four. Justices White, Day, Hughes, Lamar and Pitney concurring in the prevailing opinion, and Justices McKenna, Holmes, Lurton and Van Devanter dissenting. The decision was rendered May 26, 1913, by Mr. Justice Day, the case bearing the record number of 951, October, 1912, term of the United States Supreme Court:

THE PREVAILING OPINION.

This case is on a certificate from the Court of Appeals of the District of Columbia. The facts stated in the certificate are:

"Bauer & Cie., of Berlin, Germany, copartners, being the assignees of letters patent of the United States, dated April 5, 1898, No. 601,995, covering a certain water soluble albumenoid known as 'Sanatogen' and the process of manufacturing the same, about July, 1907, entered into an agreement with F. W. Hehmeyer, doing business in the city of New York under the trade name of The Bauer Chemical Company, whereby Hehmeyer became and has since been the sole agent and licensee for the sale of said product in the United States, the agreement contemplating that Hehmeyer should have power to fix the price of sale to wholesalers or distributors and to retailers and to the public. The agreement further contemplated that said product should be furnished by Hehmeyer at manufacturing cost, the net profits obtained by him to be shared equally by the parties to the agreement. Since April, 1910, this product has been uniformly sold and supplied to the trade and to the public by the appellants and their licensees in sealed packages bearing the name 'Sanatogen,' the words 'Patented in U. S. A., No. 601,995,' and the following:

"'Notice to the Retailer.

"'This size package of Sanatogen is licensed by us for sale and use at a price not less than one dollar ($1.00). Any sale in violation of this condition, or use when so sold, will constitute an infringement of our patent No. 601,995, under which Sanatogen is manufactured, and all persons so selling or using packages or contents will be liable to injunction and damages.

"'A purchase is an acceptance of this condition. All rights revert to the undersigned in the event of violation.

"'The Bauer Chemical Co.'

"The appellee is the proprietor of a retail drug store at 904 F street, N. W., in this city. He purchased of the Bauer Chemical Company for his retail trade original packages of said Sanatogen bearing the aforesaid notice. These packages he sold at retail at less than one dollar and, persisting in such sales, appellants in March, 1911, severed relations with him. Thereupon appellee, without the license or consent of the appellants, purchased from jobbers within the District of Columbia, said jobbers having purchased from appellants, original packages of said product bearing the aforesaid notice, sold said packages at retail at less than the price fixed in said notice, and avers that he will continue such sales."

The question propounded is: "Did the acts of the appellee, in retailing at less than the price fixed in said notice, original packages of 'Sanatogen' purchased of jobbers as aforesaid, constitute infringement of appellants' patent?"

The protection given to inventors and authors in the United States originated in the Constitution, Section 8 of Article I of which authorizes the Congress "to promote the progress of science and useful arts by securing for limited times to authors and inventors the exclusive right to their respective writings and discoveries." This protection, so far as inventors are concerned, has been conferred by an act of Congress passed April 10, 1790, and subsequent acts and amendments. The act of 1790 (1 Stat. 109) granted "the sole and exclusive right and liberty of making, constructing, using and vending to others to be used, the said invention or discovery." In 1793 (1 Stat. 318) the word "full" was substituted for the word "sole," and in 1836 (5 Stat. 117, §5) the word "constructing" was omitted. This

legislation culminated in Section 4884 of the Revised Statutes, the part with which we are dealing being practically identical with the act of 1870 (16 Stat. 198, § 22). It provides that every patent shall contain "a grant to the patentee, his heirs and assigns, for the term of seventeen years, of the exclusive right to make, use and vend the invention or discovery."

The right to make, use and sell an invented article is not derived from the patent law. This right existed before and without the passage of the law and was always the right of an inventor. The act secured to the inventor the exclusive right to make, use and vend the thing patented, and consequently to prevent others from exercising like privileges without the consent of the patentee. Bloomer vs. McQuewan, 14 How. 539, 549; Continental Paper Bag Company vs. Eastern Paper Bag Company, 210 U. S. 405, 425. It was passed for the purpose of encouraging useful invention and promoting new and useful improvements by the protection and stimulation thereby given to inventive genius, and was intended to secure to the public, after the lapse of the exclusive privileges granted, the benefit of such inventions and improvements. With these beneficent purposes in view the act of Congress should be fairly or even liberally construed; yet, while this principle is generally recognized, care should be taken not to extend by judicial construction the rights and privileges which it was the purpose of Congress to bestow.

ANOLOGY BETWEEN PATENT AND COPYRIGHT STATUTES.

In framing the act and defining the extent of the rights and privileges secured to a patentee Congress did not use technical or occult phrases, but in simple terms gave an inventor the exclusive right to make, use and vend his invention for a definite term of years. The right to make can scarcely be made plainer by definition, and embraces the construction of the thing invented. The right to use is a comprehensive term and embraces within its meaning the right to put into service any given invention. And Congress did not stop with the express grant of the rights to make and to use. Recognizing that many inventions would be valuable to the inventor because of sales of the patented machine or device to others, it granted also the exclusive right to vend the invention covered by the letters patent. To vend is also a term readily understood and of no doubtful import. Its use in the statute secured to the inventor the exclusive right to transfer the title for a consideration to others. In the exclusive rights to make, use and vend, fairly construed, with a view to making the purpose of Congress effectual, reside the extent of the patent monopoly under the statutes of the United States. Bloomer vs. McQuewan, supra, 549. We need not now stop to consider the rights to sell and convey, and to license others to sell or use inventions, which rights have been the subject of consideration in the numerous reported cases to be found in the books. We are here concerned with the construction of the statute in the aspect and under the facts now presented.

The case presented pertains to goods purchased by jobbers within the District of Columbia and sold to the appellee at prices not stated, and resold by him at retail at less than the price of $1 fixed in the notice. The question, therefore, now before this court for judicial determination is, may a patentee by notice limit the price at which future retail sales of the patented article may be made, such article being in the hands of a retailer by purchase from a jobber who has paid to the agent of the patentee the full price asked for the article sold?

The object of the notice is said to be to effectually maintain prices and to prevent ruinous competition by the cutting of prices in sales of the patented article. That such purpose could not be accomplished by agreements concerning articles not protected by the patent monopoly was settled by this court in the case of Dr. Miles Medical Company vs. Park & Sons Co., 220 U. S. 373, in which it was held that an attempt to thus fix the price of an article of general use would be against public policy and void. It was doubtless within the power of Congress to confer such right of restriction upon a patentee. Has it done so? The question has not been determined in any previous case in this court so far as we are aware. It was dealt with under the copyright statute, however, in the case of Bobbs-Merrill Company vs. Straus, 210 U. S., 339. In that case it was undertaken to limit the price of copyrighted books for sale at retail by a notice on each book fixing the price at $1 and stating that

no dealer was licensed to sell it for less, and that a sale at a less price would be treated as an infringement of the copyright. It was there held that the statute, in securing to the holder of the copyright the sole right to vend copies of the book, conferred a privilege which, when the book was sold, was exercised by the holder, and that the right secured by the statute was thereby exhausted. The court also held that it was not the purpose of the law to grant the further right to qualify the title of future purchasers by means of the printed notice affixed to the book, and that to give such right would extend the statute beyond its fair meaning and secure privileges not intended to be covered by the act of Congress. In that case it was recognized that there are differences between the copyright statute and the patent statute, and the purpose to decide the question now before us was expressly disclaimed.

Sec. 4952, Revised Statutes, a part of the copyright act, secures to an author, inventor, designer or proprietor of books, maps, charts or dramatic or musical compositions the sole liberty of printing, reprinting, publishing, completing, copying, executing, finishing and vending them. While that statute differs from the patent statute in terms and in the subject matter intended to be protected, it is apparent that in the respect involved in the present inquiry there is a strong similarity between and identity of purpose in the two statutes. In the case of patents the exclusive right to vend the invention or discovery is added to the like right to make and use the subject matter of the grant, and in the case of copyrights the sole right of multiplying and reproducing books and other compositions is coupled with the similar right of "vending the same." So far as the use of the terms "vend" and "vending" is concerned, the protection intended to be secured is substantially identical. The sale of a patented article is not essentially different from the sale of a book. In each case to vend is to part with the thing for a consideration. It is insisted that the purpose to be subserved by notices such as are now under consideration—keeping up prices and preventing competition—is more essential to the protection of patented inventions than of copyrighted articles; and it is said that the copyrighted article may be and usually is sold for a lump consideration by the author or composer and that he has no interest in the subsequent sales of the work, while patented inventions require large outlays to create and maintain a market. To some extent this contention may be based upon fact; nevertheless it is well known that in many instances the compensation an author receives is the royalties upon sales of his book, or a percentage of profits, which makes it desirable that he shall have the protection of devices intended to keep up the market and prevent the cutting of prices. But these considerations could have had little weight in framing the acts. In providing for grants of exclusive rights and privileges to inventors and authors we think Congress had no intention to use the term "vend" in one sense in the patent act and "vending" in another in the copyright law. Protection in the exclusive right to sell is aimed at in both instances, and the terms used in the statutes are to all intents the same.

It is apparent that the principal difference in the enactments lies in the presence of the word "use" in the patent statute and its absence in the copyright law. An inventor has not only the exclusive right to make and vend his invention or discovery, but he has the like right to use it, and when a case comes fairly within the grant of the right to use, that use should be protected by all means properly within the scope of the statute. In Bement vs. National Harrow Company, 186 U. S. 70, the owner of a patent granted a license to the defendant to manufacture and sell harrows embodied in the invention covered by the patent. The license provided for the payment to the licensor by the licensee of a royalty of $1 for each harrow or frame sold and stipulated that the licensee was not to sell to any person for a less price than that named, and that the license was subject to change from time to time. The case was one arising upon license agreements, originating in a state court, and did not involve the construction of the patent act in the circumstances now disclosed.

DISTINGUISHING FEATURES OF DICK MIMEOGRAPH CASE.

Chief reliance, however of the plaintiff in this case is upon the recent decision of this court in Henry vs. Dick Company, 224 U. S. 1. An examination of the opinion in that case shows that the restriction was sustained because of the right to use the

machine granted in the patent statute, distinguishing in that respect the patent from the copyright act. In that case a patented mimeograph had been sold which bore an inscription in the form of a notice that the machine was sold with the license restriction that it might only be used with stencil, ink and other supplies made by the A. B. Dick Company, the owners of the patent. The alleged infringer sold to the purchaser of the mimeograph a can of ink suitable for use with the machine with full knowledge of the restriction and with the expectation that the ink sold would be used in connection with the machine. It is expressly stated in the opinion that the machine was sold at cost or less and that the patentee depended upon the profit realized from the sale of the non-patented articles to be used with the machine for the profit which he expected to realize from his invention (224 U. S. 26). After commenting upon the copyright statutes and the resemblance between the author's right to vend copies of his work and the patentee's right to vend the patented thing, it was said (p. 46):

"To the inventor, by Sec. 4884, Revised Statutes, there is granted 'the exclusive right to make, use and vend the invention or discovery.' This grant, as defined in Bloomer vs. McQuewan, 14 How. 539, 549, 'consists altogether in the right to exclude every one from making, using or vending the thing patented.' Thus, there are several substantive rights, and each is the subject of subdivision, so that one person may be permitted to make, but neither to sell nor use the patented thing. To another may be conveyed the right to sell, but within a limited area, or for a particular use, while to another the patentee may grant only the right to make and use, or to use only for specific purposes. Adams vs. Burke, 17 Wall. 453; Mitchell vs. Hawley, 16 Wall. 544; Rubber Company vs. Goodyear, 9 Wall. 788, 799." (Italics in the original opinion.)

That case was distinguished from Bobbs-Merrill vs. Straus, supra, construing the copyright act, because of the difference in the terms of the copyright and patent statutes, the patent act conferring not only the right to make and sell, but the exclusive right to use the subject matter of the patent. It was under the right to use that the license notice in question was sustained, and it is obvious that the notice in that case dealt with the use of the machine and limited it to use only with the paper, ink, and supplies of the manufacture of the patentee. While the title was transferred, it was a qualified title, giving a right to use the machine only with certain specified supplies. It was said in the Dick case that "there is no collision between the decision in the Bobbs-Merrill case and the present opinion. Each rests upon a construction of the applicable statute, and the special facts of the cases."

It is contended in argument that the notice in this case deals with the use of the invention, because the notice states that the package is licensed "for sale and use at a price not less than one dollar," that a purchase is an acceptance of the conditions, and that all rights revert to the patentee in event of violation of the restriction. But in view of the facts certified in this case, as to what took place concerning the article in question, it is a perversion of terms to call the transaction in any sense a license to use the invention. The jobber from whom the appellee purchased had previously bought, at a price which must be deemed to have been satisfactory, the packages of sanatogen afterwards sold to the appellee. The patentee had no interest in the proceeds of the subsequent sales, no right to any royalty thereon or to participation in the profits thereof. The packages were sold with as full and complete title as any article could have when sold in the open market, excepting only the attempt to limit the sale or use when sold for not less than one dollar. In other words, the title transferred was full and complete with an attempt to reserve the right to fix the price at which subsequent sales could be made. There is no showing of a qualified sale for less than value for limited use with other articles only, as was shown in the Dick case. There was no transfer of a limited right to use this invention, and to call the sale a license to use is a mere play upon words.

The real question is whether in the exclusive right secured by statute to "vend" a patented article there is included the right, by notice, to dictate the price at which subsequent sales of the article may be made. The patentee relies solely upon the notice quoted to control future prices in the resale by a purchaser of an article said to be of great utility and highly desirable for general use. The appellee and the jobbers from whom he purchased were neither the agents nor the licensees of the patentee. They had the title to, and the right to sell, the article

purchased without accounting for the proceeds to the patentee and without making any further payment than had already been made in the purchase from the agent of the patentee. Upon such facts as are now presented we think the right to vend secured in the patent statute is not distinguishable from the right of vending given in the copyright act. In both instances it was the intention of Congress to secure an exclusive right to sell, and there is no grant of a privilege to keep up prices and prevent competition by notices restricting the price at which the article may be resold. The right to vend conferred by the patent law has been exercised, and the added restriction is beyond the protection and purpose of the act. This being so, the case is brought within that line of cases in which this court from the beginning has held that a patentee who has parted with a patented machine by passing title to a purchaser has placed the article beyond the limits of the monopoly secured by the patent act.

In Adams vs. Burke, 17 Wall. 453, Mr. Justice Miller, delivering the opinion of the court, pertinently said (p. 455):

"The vast pecuniary results involved in such cases, as well as the public interest, admonish us to proceed with care, and to decide in each case no more than what is directly in issue.

"The true ground on which these decisions rest is that the sale by a person who has the full right to make, sell, and use such a machine carries with it the right to the use of that machine to the full extent to which it can be used in point of time.

"The right to manufacture, the right to sell, and the right to use are each substantive rights, and may be granted or conferred separately by the patentee.

"But, in the essential nature of things, when the patentee, or the person having his rights, sells a machine or instrument whose sole value is in its use, he receives the consideration for its use and he parts with the right to restrict that use. The article, in the language of the court, passes without the limit of the monopoly. That is to say, the patentee or his assignee having in the act of sale received all the royalty or consideration which he claims for the use of his invention in that particular machine or instrument, it is open to the use of the purchaser without further restriction on account of the monopoly of the patentees."

Bloomer vs. McQuewan, supra; Goodyear vs. Beverly Rubber Company, 1 Cliff. 348, 354, 10 Fed. Cases, 638; Caffee vs. Boston Belting Company, 22 How. 217, 223; Keeler vs. Standard Folding Bed Company, 157 U. S. 659.

Holding these views, the question propounded by the Court of Appeals will be answered in the negative, and it is so ordered.

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SPECIAL LIQUOR TAX LIABILITY.

Concerning the special tax liability of manufacturers of and dealers in flavoring extracts and soda-water syrups containing alcohol and alcoholic compounds containing drugs, Commissioner Cabell has issued a compilation of the various rulings on the subject, as follows:

In order for a manufacturer or a dealer to be exempt under the provisions of Section 3246, Revised Statutes, from special tax liability on account of the manufacture or sale of an alcoholic compound containing drugs or medicines, the preparation must conform to the following standard:

First: The preparation must contain no more alcohol than is necessary for the legitimate purpose of extraction, solution or preservation.

Second: As the minimum dosage each one ounce liquid of the completed preparation must carry in it approximately an average U. S. P. dose for an adult of some drug or drugs of recognized therapeutic value, either singly or in compatible combination.

For the manufacture or sale of preparations conforming to this standard the special tax of a rectifier or retail dealer is not required so long as the preparation is sold for genuine medicinal purposes. It should be remembered, however, that even though a compound conforms to this standard in its ingredients, as U. S. P. Jamaica ginger, for example, or other similar compounds, the sale thereof for beverage purposes under circumstances from which the seller could readily deduce an intention to use it as a beverage, would involve the seller in special tax liability as a liquor dealer.

Manufacturers using a formula which calls for drugs sufficient to conform to the standard herein should be very careful to see that the ingredients and processes used are such that the full strength called for by the formula is present in the product. The standard contained herein sets forth the

maximum amount of alcohol and the minimum amount of medicinal ingredients necessary to change the alcohol to such an extent as to relieve the dealer from special tax liability. A common case of manufacturers incurring liability through failure to exercise this care is found in various beef, iron and wine compounds. The standard of this office (see T. D. 1358), based upon the formula on page 1821, Nineteenth Edition of the United States Dispensatory, is 1.4 percent of proteids and 0.2 percent of iron. Many samples of beef, iron and wine received in this office are markedly deficient in proteids, the claim being made after liability is asserted that the Dispensatory formula was followed, but that the beef extract must have been of a low quality, which circumstance, of course, does not relieve the manufacturer from tax liability.

Apothecaries are permitted under the exempting provisions of Section 3246, Revised Statutes, to carry in stock distilled spirits and wines and to use same in the preparation of tinctures and other U. S. P. preparations, and in the compounding of bona fide prescriptions, and no special tax is required for the sale thereof, provided the spirits or wine is compounded prior to sale with drugs sufficient in character and amount to so change the character of the alcohol as to render it unsuitable for use as a beverage. The sale, however, of spirituous liquors or wines not compounded as above indicated, even on a physician's prescription and for purely medicinal purposes, renders the person making such sale liable to internal revenue special tax.

In the same way the sale of alcohol for bathing purposes, even on a physician's prescription, renders the person making the sale liable to internal revenue special tax. If, however, the alcohol before sale is rendered by the apothecary unfit for beverage uses, in accordance with any formula approved for destruction of identity of alcohol in scientific institutions in hospital departments (see T. D. 1757), no tax liability will be incurred, but the burden of clearly proving this is on the person making the sale. In general exemption from liability to special tax on account of filling physicians' prescriptions is secured to apothecaries by having the prescription itself specify the precise nature and amount of the ingredients to be added to the compound, with the result that the compound thus prepared is rendered, as above indicated, unfit for beverage purposes.

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ABSTRACT OF LEGAL DECISIONS.

PATENTEE'S RIGHT TO FIX PRICE OF PATENTED ARTICLES SOLD. The United States Supreme Court has decided a case of the greatest interest to the owners and retailers of thousands of patented articles. The case was certified to the court by the Court of Appeals of the District of Columbia. The facts as stated in the certificate are as follows: Bauer & Cie., of Berlin, Germany, were the assignees of the United States patent, No. 601,995, dated April 5, 1898, covering a water soluble albuminoid known as "Sanatogen" and its process of manufacture. About July, 1907, they entered into an agreement with F. W. Hehmeyer, doing business in the city of New York under the trade name of The Bauer Cnemical Co., making him the sole agent and licensee for the sale of the product in the United States. The agreement contemplated that Hehmeyer should have power to fix the price of sale to wholesalers or distributors and to retailers, and to the public. It further contemplated that Hehmeyer should receive the product at manufacturing cost, the net profits obtained by him to be shared equally by the parties to the agreement. Since April, 1910, the product had been sold by the owners and their licenses in sealed packages bearing the following:

"Notice to the Retailer.

"This package of Sanatogen is licensed by us for sale and use at a price not less than one dollar ($1.00). Any sale in violation of this condition, or use when so sold, will constitute an infringement of our patent No. 601,995, under which Sanatogen is manufactured, and all persons so selling or using packages or contents will be liable to injunction and damages.

"A purchase is an acceptance of this condition. All rights revert to the undersigned in the event of violation.

"The Bauer Chemical Co."

The defendant was the proprietor of a retail drug store in Washington, D. C. He purchased of The Bauer Chemical Company for his retail trade original packages of Sanatogen bearing the above notice. These packages he sold at retail at less than one dollar, and, persisting in such sales, the

plaintiffs, in 1911, severed relations with him. He thereupon, without their consent, purchased the original packages within the District of Columbia from jobbers, and sold them at retail at less than the price fixed in the notice, and stated his intention to continue to do so.

The question in the case was: Did the defendant's acts, in retailing at less than the price fixed in the notice, original packages of Sanatogen purchased of jobbers, constitute infringement of the plaintiff's patent?

The opinion of the Supreme Court was given by Mr. Justice Day. The right to make, use and sell an invented article, he said, is not derived from the patent law. This right existed before and without the passage of the law and was always the right of an inventor. The act secured to the inventor the *exclusive* right to make, use and vend the thing patented, and consequently to prevent others from exercising like privileges without the consent of the patentee. Bloomer v. McQuewan, 14 How. 539, 549; Continental Paper Bag Co. v. Eastern Paper Bag Co., 210 U. S. 405, 425. The right to make can scarcely be made plainer by definition, and embraces the construction of the thing invented. The right to use is a comprehensive term and embraces within its meaning the right to put into service any given invention. To vend is also a term readily understood and of no doubtful import. Its use in the statute secured to the inventor the exclusive right to transfer the title for a consideration to others. In the exclusive rights to make, use and vend, fairly construed, with a view to making the purpose of Congress effectual, reside the extent of the patent monopoly under the statutes of the United States. Bloomer v. McQuewan, supra, 549. The question for judicial determination was: May a patentee by notice limit the price at which future retail sales of the patented article may be made, such article being in the hands of a retailer by purchase from a jobber who has paid to the agent of the patentee the full price asked for the article sold?

That this could not be done in case of articles not protected by the patent monopoly was settled in Dr. Miles Medical Co. v. Park & Sons Co., 220 U. S. 373, in which it was held that an attempt to thus fix the price of an article of general use would be against public policy and void. Whether Congress has conferred such a right of restriction upon a patentee has never before been determined by the Supreme Court. The case of Bobbs-Merrill Co. v. Straus, 210 U. S. 339, was made the copyright statute, from which the word "use" is absent. The plaintiff relied chiefly upon Henry v. Dick Co., 224 U. S., where the restriction was sustained because of the right to use the machine granted in the patent statute, distinguishing in that respect the patent from the copyright act. In that case a patented mimeograph had been sold which bore an inscription in the form of a notice that the machine was sold with the license restriction that it might only be used with stencil, ink and other supplies made by the A. B. Dick Company, the owners of the patent. The alleged infringer sold to the purchaser of the mimeograph a can of ink suitable for use with the machine with full knowledge of the restriction and with the expectation that the ink sold would be used in connection with the machine. It was expressly stated in the opinion that the machine was sold at cost or less and that the patentee depended upon the profit realized from the sale of the non-patented articles to be used with the machine for the profit which he expected to realize from his invention. (224 U. S. 26.)

It was contended in argument that the notice in the present case deals with the use of the invention, because the notice states that the package is licensed "for sale and use at a price not less than one dollar," that a purchase is an acceptance of the conditions, and that all rights revert to the patentee in the event of violation of the restriction. But the court held that it would be a perversion of terms to call the transaction in any sense a license to use the invention. There was no showing of a qualified sale for less than value for limited use with other articles only, as was shown in the Dick case.

The real question the court held to be whether in the exclusive right secured by statute to "vend" a patented article there is included the right, by notice, to dictate the price at which subsequent sales of the article may be made. The patentee relied solely upon the notice quoted to control future prices in the resale by a purchaser of an article said to be of great utility and

highly desirable for general use. The defendant and the jobbers from whom he purchased were neither the agents nor the licensees of the patentee. They had the title to, and the right to sell, the article purchased without accounting for the proceeds to the patentee and without making any further payment than had already been made in the purchase from the agent of the patentee. Upon such facts as were presented the court considered the right to *vend* secured in the patent statute was not distinguishable from the right of vending given in the copyright act. In both instances it was the intention of Congress to secure an exclusive right to sell, and there was no grant of a privilege to keep up prices and prevent competition by notices restricting the price at which the article might be resold. The right to vend conferred by the patent law had been exercised, and the added restriction was beyond the protection and purpose of the act. That being so, the case was brought within that line of cases in which the Supreme Court from the beginning has held that a patentee who has parted with a patented medicine by passing title to a purchaser has placed the article beyond the limits of the monopoly secured by the patent act. The question propounded by the Court of Appeals was therefore answered in the negative. Messrs. Justices McKenna, Holmes, Lurton and Van Devanter dissented.

Bauer & Co. v. O'Donnell, U. S. Supreme Court, decided May 26, 1913.

MISBRANDING—"PACKAGE" — PRESCRIPTION.—Proceedings for misbranding were instituted against an Ohio corporation doing business and having its principal office at Lebanon, Ohio, where it maintained a sanatorium for the treatment of persons addicted to the drug and liquor habit. It also treated patients by correspondence. According to an agreed statement of facts the defendant shipped two boxes of medicine by railway from Lebanon to Washington, D. C. All the bottles contained alcohol as one of the ingredients, and some contained as another ingredient morphine in varying and diminishing quantities. The bottles were labeled "Maplewood Sanatorium. Ledger M. 45. 3,609. Directions: Take half a tablespoonful four times a day and as directed." The president of the defendant company, who was also its medical director, was a graduate of Columbia University and a specialist in treating patients addicted to liquor and drug habits. The agreed statement of facts stated: "It is a recognized fact by the medical profession generally that in the treatment of diseases, especially the drug habit, it is an important, and in most cases a vital factor, that the patient should not know the composition of the medicines given in such treatment." This fact was offered as a defense to the alleged misbranding, because correct labeling and branding would defeat the object of the treatment.

The information charged that each of the bottles contained in the packages was misbranded. It was held that it was not necessary to allege that the boxes containing the bottles were misbranded; the word "package" as used in the Federal Pure Food and Drugs Act having reference to the package which passes into the possession of the public, or the real consumer, and the words "original unbroken package" to the package in the form in which it is received by the vendee or consignee. It was also held that it was no defense that the sending of the medicine was a mere incident of the defendant's employment, the primary object of which was the diagnosis of the patient's ailment and the preparation of a prescription for the needs of his particular case.

Dr. J. L. Stephens Co. v. United States, (C. C. A.), 203 *Fed.* 817.

TAX ON BAY RUM IMPORTED FROM PORTO RICO.—The question was certified to the United States Supreme Court whether bay rum imported from Porto Rico subsequent to the passage of the act of April 12, 1900, and prior to the passage of the act of February 4, 1909, was subject to the payment of a tax equal to the internal revenue tax imposed in the United States, under sections 3248, and 3254 (U. S. Comp. Stat., 1901, pp. 2107, 2111), on "distilled spirit, spirits, alcohol, and alcoholic spirit." Section 3 of the act of 1900 provides that articles of merchandise of Porto Rican manufacture, coming into the United States, shall pay a tax "equal to the internal revenue tax imposed in the United States upon the like articles of merchandise of domestic manufacture." It was held that substance, and not name, was the test of the likeness, and that the imposition of a specific tax upon bay rum

imported from Porto Rico, made by the act of February 4, 1909, was not a congressional declaration that bay rum so imported was not subject to a tax under prior statutes. The question of the Court of Appeals was answered in the affirmative.

Jordan v. Roche, 33 *Sup. Ct.* 573.

LICENSE TO SELL MEDICINES—ORIGINAL PACKAGES.—Appeal was made from a conviction of being a traveling person pursuing the occupation of selling medicines without a license. The defendant had a two-horse hack on which was painted the name of certain remedies, with which he traversed a county in Texas, selling these as a regular occupation. It was held that the resident agent of a foreign manufacturing corporation, who receives its goods in bulk, including patent and other medicines, unpacks them at his house, puts part in his team, and retails them from place to place, making his profits by commissions on his sales, was not engaged in interstate commerce, but was engaged in the occupation of peddling within the state, and was therefore liable for the license tax.

Shed v. State, Texas Criminal Appeals, 155 *S. W.* 524.

PURCHASE OF DRUG BUSINESS—VALIDITY OF CONTRACT.—In an action upon a written contract for the sale of a drug-store owned by the plaintiff "including the business of a druggist," the stock to be taken "at the invoice purchase price," which contract the defendant refused to carry out, one defense was that the contract was unenforceable, because the good will had been built up by acts in violation of the law, as the plaintiff, although a physician, was not a pharmacist or assistant pharmacist, and at no time had either in his employ. It was held that these allegations constituted no defense.

It was also held that a provision for the appraisement of the stock "at the invoice purchase price" meant that the goods were to be appraised at what had been paid for them when they were bought, not at what it would cost to buy them from wholesalers at the time of the appraisement.

Swisher v. Dunn, Kansas Supreme Court, 131 *Pac.* 571.

TRADE-MARK—INFRINGEMENT OF LABEL.—A trade-mark case as based upon a registered trade-mark for a face cream consisting of a drawing showing a circular center containing a woman's face, with the name of the article in a circle around the head. Practically the only resemblance between the two labels was the fact that both had a woman's head in the center. The trade-mark made no mention of coloring; besides which the defendant used green where the complainant used red. It was held there was no infringement.

Aubry Sisters v. Creme de Mohr Co., (*C. C. A.*), 203 *Fed.* 861.

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NOTICES OF JUDGMENTS UNDER FEDERAL FOOD AND DRUGS ACT.

No. 2158. *Adulteration and Misbranding of Apple Flavored Vinegar Compound.* Product not apple vinegar but a solution of dilute acetic acid, colored and flavored with boiled apple juice in imitation of apple vinegar compound. Sharp-Elliott Manufacturing Co., El Paso, Texas. Fine of $100. Western District of Texas.

No. 2159. *Adulteration and Misbranding of Olive Oil,* cotton seed oil having been substituted in part. Gengars & Muselli, New York. Fine of $50. Southern District of New York.

No. 2160. *Same offense.* Robert Fanaro, New York. Fine of $75.

No. 2162. *Misbranding of Vanilla Extract.* Product labeled "1 Ounce full measuse," but did not contain that amount. Shippers, Van Duzer Co., New York. Forfeited. District of Columbia.

No. 2165. *Adulteration and Misbranding of Syrup.* Substitution of commercial glucose for drip syrup. Farrell & Co., Omaha, Neb. Forfeited. Colorado.

No. 2169. *Adulteration and Misbranding of Jamaica Ginger.* Product not a concentrated essence of Jamaica ginger as represented, but an appreciable quantity of capsicum had been substituted for Jamaica ginger, and label falsely represented it to be unequaled for colic, cramps, diarrhœa, flatulency and dyspepsia, and it contained 60.4 percent of alcohol not declared on the label.

Union Manufacturing & Packing Co., Salt Lake City, Utah. Fine of $10. Utah.

No. 2170. *Adulteration and Misbranding of Vinegar.* Product composed of dilute acetic acid and other substances in imitation of cider vinegar. M. H. & M. S. Place, Oswego, N. Y. Forfeited and released. Rhode Island.

No. 2172. *Adulteration of Candy Cigars.* Product contained arsenic. E. Greenfield's Sons, New York. Sentence suspended. Southern District of New York.

No. 2173. *Adulteration of Mineral Water.* Product contained B. coli organisms. Henry Schierer, New York. Sentence suspended. Southern District of New York.

No. 2182. *Misbranding of Beer.* Product labeled carbonated soda, absolutely non-intoxicating, but was in fact ordinary beer. Wheeling Specialty Co., Wheeling, W. Va. Fine of $15. Northern District of West Virginia.

No. 2185. *Adulteration and Misbranding of Vinegar.* Product contained water. Dawson Bros. Mfg. Co., Memphis, Tenn. Forfeited and sold. Eastern District of Louisiana.

No. 2186. *Adulteration and Misbranding of Phillips' Digestible Cocoa.* Product a compound of cocoa, sugar, phosphates and vanilla flavoring. The statement in a label on the back of the can as to the composition of the contents held not sufficient to correct the statement in larger type on the principal label on the front of the can that the product was cocoa. Shippers, Charles H. Phillips Chemical Co., New York. Forfeited and sold, Eastern District of Louisiana.

No. 2188. *Adulteration and Misbranding of Acetanilid Tablets and Nitroglycerin Tablets.*

(1) Acetanilid Tablets labeled "Acetanilid 3 grs.," but they only averaged 2.57 grains acetanilid per tablet. (2) Nitroglycerin tablets labeled "1-50 gr.," but contained only 0.012 grain per tablet. Sutliff & Case Co., Peoria, Ill. Fine of $10. Southern District of Illinois.

No. 2191. *Adulteration and Misbranding of Nux Vomica Tablets.* Product labeled "Nux Vomica Powd. Ext. 1-4 gr.," but tablets contained only one-sixth of a grain of nux vomica powdered extract. Sutliff & Case Co., Peoria, Ill. Fine of $10. Southern District of Illinois.

No. 2194. *Adulteration and Misbranding of Vanilla Extract.* Analysis showed: vanillin, 0.15 percent; coumarin, 0.13 percent; iodin test, positive; lead number at 44, 0.09; caramel, present. Misbranded and adulterated as imitation and by use of caramel to conceal inferiority. Ferris-Noeth-Stern Co., Baltimore, Md. Fine of $5. Maryland.

No. 2195. *Adulteration and Misbranding of Malt Saccharine.* Addition of ground malt. Ferris-Noeth-Stern Co., Baltimore, Md. Fine of $20. Maryland.

No. 2198. *Adulteration and Misbranding of Vanilla Extract.* Diluted and adulterated with inferior substances. Steinwender-Stoffregen Coffee Co., Fargo, N. Dak. Released on filing bond. North Dakota.

No. 2199. *Misbranding of Bitters.* Labeled "Pale Orange Bitters." Analysis, Alcohol, 32 percent; colored with caramel. Misbranded because label did not state quantity or proportion of alcohol. Betterman-Johnson Co., Cincinnati, Ohio. Fine of $25 and costs. Southern District of Ohio.

No. 2200. *Adulteration and Misbranding of Orange Flavor.* Analysis showed: orange oil, 2.5 percent; glycerin and gums present. Label stated "4 Drops equal a teaspoonful of ordinary extract xxx fourteen drops to equal an ounce." American Products Co., Cincinnati, Ohio. Fine of $25 and costs. Southern District of Ohio.

No. 2201. *Adulteration and Misbranding of Grenadine Syrup.* Product a solution of sugar and water, artificially colored and flavored and containing only an infinitesimal quantity, if any, of the juice of the pomeranate. Betterman-Johnson Co., Cincinnati, Ohio. Fine of $25 and costs. Southern District of Ohio.

Editorial Notes and Announcements

JAMES H. BEAL, Editor.....Scio, O.

All communications for insertion in the JOURNAL, or respecting advertising should be sent to the Editor.

The Association does not accept responsibility for the opinions of contributors. Offensive personalities must be avoided.

Under the rules of the Post Office the JOURNAL can be regularly mailed only to bona-fide paid subscribers. Subscriptions and association dues should be sent to the Treasurer, H. M. Whelpley, 2342 Albion Place, St. Louis, Mo.

Requests for back numbers, and claims for missing numbers should be sent to the Editor.

Claims for missing numbers will not be allowed if sufficient notice has not been given of change of address, and in no case if received later than sixty days from the date of issue.

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REPRINTS.

If the request is made at the time copy is submitted, authors will be furnished with not to exceed 50 reprints, without cover, of papers accepted for publication in the JOURNAL.

Larger numbers of reprints will be supplied by the Stoneman Press Co. at the following prices, provided the order is received before the type has been distributed:

100 copies, 4 pages, no cover, $2.50, with cover, $4.50.

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200 copies, 12 or 16 pages, no cover, $6.50, with cover, $8.00.

Orders for reprints may be sent either to the Editor, or to the Stoneman Press Co. Columbus, Ohio.

ERNEST BERGER MEMBERSHIP PRIZE.

Ernest Berger, of Tampa, Fla., annually offers to the person making the highest rating before the Florida Board of Pharmacy a prize consisting of a nomination to membership in the A. Ph. A. and payment of the first year's dues. The prize this year was won by Mrs. Mabel Lyon, of Bowling Green, Ky., who made the highest average in all subjects.

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STURMER AND MEEKER PRIZES.

Dr. G. H. Meeker and Prof. J. W. Sturmer, of the Medico-Chi College of Philadelphia, annually offer a nomination to membership prize and first year's fee to the two students ranking highest in chemistry and pharmacy respectively.

The prize winners for this year were John Irvin Hoffman, of Coal Dale, Pa., and Hyman W. Ostrum., of Philadelphia.

The JOURNAL extends congratulations to Messrs. Hoffman and Ostrum for the excellence of scholarship which the nomination to membership indicates.

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A. PH. A. TO BE ENTERTAINED AT CINCINNATI.

It is the desire of the Cincinnati Branch, the Ohio Valley Druggists' Association and the American Druggists' Fire Insurance Co. to show some attention to members of the American Pharmaceutical Association who stop in Cincinnati on their way to the Nashville meeting.

Members who will find it convenient to stop in the city are requested to notify either C. G. Merrell, of the Merrell Chemical Co., or F. H. Freericks, of the A. D. F. I. Co., of the time of their arrival and the probable length of their stay.

Those who have experienced Cincinnati's hospitality in the past can recommend the brand.

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EXCURSION TO MAMMOTH AND COLOSSAL CAVERNS.

Those who return from the Nashville meeting by the way of Cincinnati will have the opportunity of stopping over at Glasgow

Junction for the side trip to the wonderful Mammoth and Colossal Caverns.

The only extra cost will be the fare from Glasgow Junction, about 12 miles, and the expense of board at Mammoth Cave Hotel, and guide fees, which in all should not amount to more than five to six dollars.

The extra time involved will not require more than a day and a half. All who can possibly do so should avail themselves of the opportunity to see these underground wonders.

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ITINERARY FROM CHICAGO TO NASHVILLE.

For the meeting of our Association at Nashville, Tenn., August 18 to 23, the undersigned, Chairman Transportation Committee, has arranged with the Chicago and Eastern Illinois railroad for train service for the movement of those attending from Chicago and tributary territory. Special Pullman cars will be provided on train leaving La Salle station, Chicago, 6:20 p. m., Sunday, August 17, arriving Nashville 7:55 a. m., Monday, August 18.

In order to make proper arrangements to accommodate those making the trip, it will be necessary to advise the undersigned as soon as possible whether it is your intention to join our party.

A special reduced round trip fare of $18.80 will be in effect from Chicago and tickets will be on sale August 15, 16 and 17, with return limit of September 3. The one-way fare from Chicago is $10.75 and we can also take advantage of the party rate, which is $9.30 each way for party of ten or more. The price of the Pullman is $2.50 for lower berth, $2 for upper berth and $9 for drawing room. For those attending who wish to return by way of Cincinnati in order to attend the meeting of the N. A. R. D. Association, the one-way fare from Nashville to Cincinnati is $8.30 and there is also a party rate for ten or more traveling together of $6.05. The local rate from Cincinnati to Chicago is $6, or two cents a mile, there being no special party fare in effect.

You will note that, although it is impossible for us to secure a routing of tickets from Chicago to Nashville, returning via Cincinnati, arrangements can be made as outlined above.

Yours truly,

WILHELM BODEMANN,
Chairman Transportation Committee.

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ITINERARY FROM NEW YORK TO NASHVILLE.

Leave New York Saturday, Aug. 16, 9:30 p. m., Pa. R. R. depot, 31st street.

Leave Philadelphia, Sunday, Aug. 17, 12:15 a. m.; leave Baltimore, Sunday, Aug. 17, 2:50 a. m.; leave Washington, Sunday, Aug. 17, 4:10 a. m., via Southern R. R.

Arrive at Nashville, Tenn., 2:55 a. m., Monday, Aug. 18, 1913.

No change of cars from New York to Nashville. Passengers from Baltimore and Washington may board local sleepers any time after 10 p. m. on Saturday and transfer on Saturday morning to the Nashville car. Arriving at Nashville (2:55 a. m.) the car will be sidetracked and passengers may sleep till 7 a. m.

Fare, New York to Nashville, $19.30; Philadelphia to Nashville, $17.50; Baltimore to Nashville, $15.50; Washington to Nashville, $14.75.

This fare is the so-called party rate and will be granted only to parties of ten or more. Smaller numbers must pay full fare to Washington, where the whole party will join and travel at the reduced rate (2 cents a mile.)

Sleeper, from New York to Nashville, lower berth $5.50, upper $4.50; from Philadelphia, Baltimore and Washington, lower $5, upper $4. Return fare the same.

Dining car on train.

Members who wish to take this train should send check at least three days before the departure to D. C. Alpers, City Island, N. Y., or A. S. Thweat, Agent, 264 5th Ave., N. Y.

The Bulletin Board

SECTION ON HISTORICAL PHARMACY.

BULLETIN No. 1.

The members of the A. Ph. A. are earnestly requested to submit papers, letters, photographs, books, etc., on historical subjects in Pharmacy at the Convention at Nashville, Tenn., in August. This Section is becoming of increased interest and of noted value to the Association. To this end we desire your cooperation that this meeting shall contribute its part to the work so successfully begun a few years ago. Your prompt consideration will be appreciated.

Sincerely yours,

JOHN G. GODDING, Chairman.
CASWELL A. MAYO, Historian.
FREDERICK T. GORDON, Secretary.

Boston, June 2, 1913.

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CINCINNATI BRANCH WILL ENTERTAIN.

The next meeting of the American Pharmaceutical Association begins at Nashville, August 18th, and many members will pass through Cincinnati on the way to the meeting. The Cincinnati Branch have a special Committee appointed for the purpose and extends a cordial invitation to all members to accept its hospitality on Sunday, August 17th, and it is hoped that as many as possible will arrange to arrive at Cincinnati Sunday morning and leave with the Cincinnati members Sunday evening at 10:30, arriving in Nashville at 8:05 Monday morning, August 18th, in time for the Council Meeting and in ample time for all members to get comfortably settled in their rooms before opening of the first session.

On a previous occasion it has been our pleasure to have as our guests a few of the members passing through our city and the enjoyment that seemed to have been derived therefrom has lead us to feel that a larger number may find it worth while to start a few hours earlier and spend Sunday in visiting some of the points of interest in Cincinnati.

We hope that many will be with us and we will appreciate advices from as many as can let us know in advance so that the Committee can make its arranements accordingly.

Fraternally,

CHAS. G. MERRELL, Chairman,
P. O. Box No. 432,
FRANK H. FREERICKS,
EDWARD VOSS,
Committee of the Cincinnati Branch.

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SLEEPING CAR RESERVATIONS

As a member of the Transportation Committee of Cincinnati, I will be glad to hear from all members who expect to attend the meeting at Nashville and come toward Cincinnati and who have not made through sleeping car reservations to Nashville.

There are two coaches on the regular train and I will reserve all berths in one of these up to the last moment and can secure an additional car going from and through Cincinnati if we require more space. Reservations will be made in the way in which they are received. If upper berths are preferred by any, I shall hope to hear from them as early as possible.

The round trip of $12.75 from Cincinnati to Nashville has been made on account of this Convention. Very truly yours,

C. G. MERRELL,
P. O. Box 432, Cincinnati.

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NORTHWESTERN UNIVERSITY CHANGE IN THE REQUIREMENTS FOR ADMISSION TO SCHOOL OF PHARMACY.

Beginning with the session of 1913-1914, aplicants for admission to the School of Pharmacy, whether candidates for the degree of Graduate in Pharmacy or for the degree of Pharmaceutical Chemist, must give evidence of preparation in fifteen units of high school work, or an equivalent.

While this is more than the usual admission requirements enforced by schools of pharmacy, it is believed it is distinctly in the interest of the graduates and necessary for that work of the school which will furnish the basis for the best success in the practice of pharmacy.

The pharmacist in order to serve the phy-

sician properly must in the near future have at his command a thorough knowledge of bacteriology, physiological chemistry, and pharmacology, which can be obtained only by a systematic training in a well-equipped school whose students are well prepared. In order to provide thorough instruction, the School of Pharmacy will include courses in these subjects as a part of the regular work for a degree.

The School of Pharmacy will be removed to the buildings of the Northwestern University Medical School, 24th and Dearborn Streets, Chicago. The best class-room and laboratory equipments will be provided, and the close relations of the two schools make it possible to offer unusually strong courses in pharmacy.

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QUARTERLY MEETING OF THE EXECUTIVE COMMITTEE OF THE AMERICAN DRUGGISTS' FIRE INSURANCE COMPANY.

The regular Quarterly Meeting of the Executive Board of the A. D. F. I. Co. was held in Cincinnati, on May 16-17. There were present Messrs. Avery, Heinritz, Beal, Kauffman, Rothwell, Zwick and Freericks. The Board found that the Company had made splendid progress during the first quarter of the year.

On the 31st day of March the total insurance in force amounted to $10,550,965.73, at a premium of $109,322.91. Of this amount there was reinsured at that time insurance amounting to $728,124.50, at a premium of $8,456.15. After deducting this reinsurance the Company, besides its capital and surplus, on the business retained by it, had increased its reinsurance reserve to $50,545.89, which is part of the total assets amounting to $327,634.21. The increase in the reinsurance reserve on the business written for the first three months of the year amounted to $2,083.92. The Board authorized the purchase of Ohio Municipal Bonds for a total of $9,500.

The net fire losses for the first three months of the year amounted to $16,404.46. The net expenses for the first three months of the year amounted to $10,233.07. The total income for the first quarter, not including maturing bonds, and reinsurance refunded on fire losses, and after deducting premiums paid out for reinsurance amounted to $33,050.43.

With the increase in business shown it is fairly estimated that the Company will save its policyholders during this year the sum of fully $50,000 in their premium cost.

The Executive Board devoted considerable time and attention toward taking part in the entertainment of the N. A. R. D. Convention, in cooperation with the Ohio Valley Druggists' Association. Preliminary arrangements were made for an entertainment which will be unique in character. It is expected to make the occasion a memorable one, without interfering with the regular work of the Convention.

Proceedings of the Local Branches

"All papers presented to the Association and its branches shall become the property of the Association, with the understanding that they are not to be published in any other publication than those of the Association, except by consent of the Committee on Publication."—By-Laws, Chapter X, Art. III.

Reports of the meetings of the Local Branches should be mailed to the editor on the day following the meeting, if possible. Minutes should be *plainly* written, or typewritten, with wide spaces between the lines. Care should be taken to give proper names correctly, and manuscript should be signed by the reporter.

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ST. LOUIS BRANCH.

A regular meeting of the Saint Louis Branch of the American Pharmaceutical Association was held in the Saint Louis College of Pharmacy on Friday evening, May 16. In the absence of the President and the Vice Presidents, and on supported motion, Professor Leo Suppan acted as Chairman. The reading of the minutes of the previous meeting was omitted.

Professor Suppan, in his usual interesting way, introduced Mr. L. P. Jensen, who gave an illustrated lecture on "Plants Growing in the Vicinity of Saint Louis Used in Medicine and for Ornamental Planting.

In his opening remarks Mr. Jensen stated that he was not a pharmacist, and hence was somewhat handicapped as to the use to

which many of the plants are put in medicine; that he studied them principally from the botanical standpoint, and for decorative effects.

Continuing, he said that there are about five hundred species of trees, shrubs and plants growing within a radius of fifty miles of Saint Louis that can be planted in our parks and home-grounds to make them more attractive.

Mr. Jensen then exhibited herbarium specimens of about eighty plants, which have been used in medicine, labeled with the botanical and common names, which he gathered on the Grant Farm, Saint Louis County:

Acer negundo, Box-elder, Ash-leaved Maple.
Acer nigrum, Black Sugar Maple.
Aesculus glabra, Ohio Buckeye.
Ailanthus glandulosa, Tree of Heaven.
Betula nigra, Red or River Birch.
Celtis occidentalis, Hackberry Sugarberry.
Diospyrus Virginiana, Persimmon.
Fraxinus Americana, White Ash.
Gleditsia triacanthos, Honey Locust.
Gymnocladus Canadensis, Kentucky Coffee Tree.
Carya Alba, Mocker-nut.
Hicoria glabra, Pignut.
Juglans nigra, Black Walnut.
Juniperus Virginiana, Red Cedar, Savin.
Morus rubra, Red Mulberry.
Platanus occidentalis, Button-wood, Sycamore, Plane Tree.
Prunus Pennsylvanica, Wild Red Cherry.
Prunus serotina, Wild Black Cherry.
Quercus alba, White Oak.
Quercus rubra, Red Oak.
Robinia pseud-acacia, Black Locust.
Tilia Americana, Basswood, American Linden.
Ulmus fulva, Slippery, Red or Moose Elm.
Alnus rugosa, Smooth Alder.
Cercis Canadensis, Red-bud, American Judas Tree.
Cornus Florida, Flowering Dog-wood.
Crataegus tomentosa, Pear Thorn.
Euonymus atropurpureus, Burning Bush.
Prunus Americana, Wild yellow or Red Plum.
Staphylea trifolia, Bladder Nut.
Sassafras officinale, Sassafras.
Pyrus coronaria, American Crab Apple.
Salix purpurea, Purple Willow.
Cephalanthus occidentalis, Button-bush.
Clethra alnifolia, Sweet Pepper-bush.
Corylus Americana, Hazel-nut.
Rhus Canadensis, Dewberry.
Rhus copalina, Black Sumach, Dwarf Sumach.
Rhus glabra, Smooth Sumach.
Rides floridum, Wild Black Currant.
Rubus occidentalis, Black Raspberry.
Sambucus Canadensis, Common Elder.
Symphorecarpus racemosa, Indian Currant.
Viburnum prunifolium, Black Haw.
Ampelopsis arborea, Pepper Vine, Woodbine.
Bignonia capriolata, Cross Vine.
Celastrus scandens, Bitter Sweet.
Menispermum Canadensis, Moon Seed.
Achillea millefolium, Yarrow, Milfoil.
Acorus calamus, Sweet Flag, Calamus.
Arisaema triphyllum, Indian Turnip, Jack-in-the-Pulpit.
Asclepias tuberosa, Butterfly Weed.
Contiana flavida, Yellow Gentian.
Geraneum maculatum, Cranesbill.
Hibiscus moschatos, Swamp Rose Mallow.
Nepeta hederacea, Ground Ivy.
Podophyllum peltatum, May Apple.
Polygonum biflorum, Solomon's Seal.
Sanguinaria Canadensis, Blood Root.
Smilacina racemosa, Wild Spikenard.
Tradescantia grandiflorum,. Large-flowered, Wake-robin.
Typha latifolia, Broad-leaved Cat-tail.
Adiantum pedatum, Maiden Hair Fern.
Pteris aquilina, Common Brake Fern.
Hydrastis Canadensis, Golden Seal, Hydrastis.
Hamamelis Virginiana, Witch Hazel.
Zanthoxylum Americanum, Prickley Ash.
Rhus toxicodendron, Poison Sumac, Poison Ivy, and Poison Oak.
Euonymus atropurpureus, Burning Bush, Wahoo.
Rhamnus catharticus, Common Buckthorn.
Viola tricolor, Pansy.
Mentha piperita, Peppermint.
Monarda punctata, Horse-Mint.
Nepeta Cataria, Catnip.
Lycium Vulgare, Matrimony Vine.

Mr. Jensen concluded by saying that pharmacists should use their best influence to get the parks and public grounds in their cities and towns planted with native and naturalized plants as a means of preservation, for it is but a question of time until the trend of progress will have removed our primal forests and then many of our best plants will only be found as dried specimens in herbariums.

Among those who took part in the discussion were Messrs. J. M. Good, Francis Hemm, Julius Hoester, Charles N. Horton, Julius Hurter, Hosea Howard, J. W. Mackelden, George Ruths, W. H. Fly, E. A. Sennawald, Alexander Pearlstone, L. W. Devereur, O. S. Ledman, Leo Suppan, J. Kipp, G. T. Buehler, J. A. Wilkerson, Misses B. P. Cousins, Mary R. Cousins and Elizabeth Widman.

A vote of thanks was extended Mr. Jen-

sen for his interesting lecture and, on motion, the meeting adjourned.

J. W. MACKELDEN, Secretary.

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NASHVILLE BRANCH.

That the Denver meeting of the A. Ph. A. made no mistake when it selected Nashville, Tenn., as its next meeting place is evident, judging from the enthusiasm and activity which is being shown in this Southern city in its preparations for the convention, which meets here August 18.

The members of the Nashville branch began their preparations by holding a series of get-together meetings to which all the local druggists and their wives were invited. These meetings have resulted in much good by creating a feeling of good fellowship among them. The last of this series was held May 27 in the Y. M. C. A. building, with W. R. White as chairman. Enthusiastic speeches were made by Dr. E. A. Ruddiman, J. O. Burge, Charles S. Martin, Ira B. Clark, M. E. Hutton, C. C. Young and others. Dainty refreshments were served. A Ladies' Reception Committee was appointed, with Mrs. R. L. Thompson chairman.

A meeting of the Nashville Branch was held June 12 in the Board of Trade rooms in the Stanlman building, with Dr. J. O. Burge presiding. The meeting was devoted exclusively to the discussion of plans for the convention.

Ira B. Clark, chairman of the Membership Committee, reported the application of two new members. He stated that the distribution of the literature is still being pushed, and it is estimated that every druggist in the fifteen Southern states will get a notice of the meeting and a request to join. A letter will be mailed soon to the most prominent druggists, containing a personal appeal to them to join the Association, and a large increase in members is expected.

A beautiful badge was ordered, being a combination badge and watch fob, with a cross bar at the top bearing the letters A. Ph. A., and the number. On the ribbon below is the picture of the Hermitage enclosed in an oxidized silver rim.

The Entertainment Committee was heard from through its chairman, W. R. White, who stated that a joint committee consisting of the directors of Board of Trade and the Industrial Bureau had been appointed by these organizations to cooperate with the local druggists in properly extending a royal Southern welcome to the visitors and would meet with them at an early date.

A complete list of rates were reported from the local hotels by J. B. Sand, chairman of the Hotel Committee.

Dr. E. A. Ruddiman reported having visited the recent meeting of the Georgia Pharmaceutical Association at Columbus, Ga.

A large delegation of local A. Ph. A. enthusiasts will attend the Memphis meeting of the Tennessee Pharmaceutical Association, July 8 to 10, where a great time is promised. Some big results for the A. Ph. A. is looked for by the Membership Committee.

WILLIAM R. WHITE, Sec'y.

Council Business

COUNCIL LETTER No. 15.

PHILADELPHIA, June 9, 1913.

To the Members of the Council:

Motions No. 24 (*Appropriation of* $100 *to National Drug Trade Conference, Second Meeting*); *No.* 25 (*Election of Members; Applications No.* 155 *to* 175, *inclusive*); *No.* 26 (*Approval of Suggested Program for* 1913 *Annual Meeting*), and *No.* 27 (*Election of Members; Applications No.* 176 *to* 201, *inclusive*), have each received a majority of affirmative votes.

Motion No. 28 (*Appropriation of* $2200 *for Volume* 59 *of the Proceedings*). Moved by J. H. Beal, seconded by J. A. Koch, that the sum of $2200, or so much thereof as is necessary be appropriated for Volume 59 of the Proceedings and Report on the Progress of Pharmacy. The above appropriation is approved by the Committee on Finance.

Chairman A. V. Pease, of the Section on Commercial Interests, requests an appropriation of $50 to pay the expense incident to the securing of a lecture on "Scientific Salesmanship" to be delivered under the auspices of the Section on Commercial Interests.

Motion No. 29 (*Appropriation of* $50 *for Section on Commercial Interests*). Moved

by J. H. Beal, seconded by J. A. Koch, that fifty dollars be appropriated for the above-named purpose.

The appropriation is approved by the Committee on Finance.

J. W. ENGLAND,
Secretary of the Council.

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U. S. PUBLIC HEALTH SERVICE.

Gahn, Henry, Pharmacist. Granted two days' leave of absence May 16-17, 1913, under paragraph 210, Service Regulations. May 22, 1913.

Smith, L. E., Pharmacist. Granted seven days' leave of absence, from May 20, 1913, under paragraph 210, Service Regulations. May 19, 1913.

Macdowell, W. F., Pharmacist. Granted 18 days' extension of annual leave from May 7, 1913, on account of sickness. May 28, 1913.

LaGrange, J. V., Pharmacist. Granted one day's leave of absence, May 27, 1913, under paragraph 210, Service Regulations. May 27, 1913.

Ryder, L. W., Pharmacist. Granted two days' leave of absence, April 17-18, 1913, under paragraph 210, Service Regulations. May 31, 1913.

Troxler, R. F., Pharmacist. Granted two days' leave of absence in May, 1913, under paragraph 210, Service Regulations. June 2, 1913.

Sterns, C. O., Pharmacist. Granted one day's leave of absence, April 25, 1913, under paragraph 210, Service Regulations. May 31, 1913.

PROMOTION.

Pharmacist M. E. Berkowitz promoted to Pharmacist of the second class, to date from May 9, 1913.

ABOUT PRESCRIPTION WEIGHTS.

We wonder how many druggists observe all the precautions they should to properly keep their prescription weights so that their accuracy can at all times be depended upon? The usual custom is to keep the weights lying in a depression made in the plate of the prescription balance for that purpose. Others preserve them in boxes; the more careless ones—fortunately their number is small—leave them scattered about the prescription counter, where they must be hunted for and got together every time a prescription comes in to be filled. We have seen samples of such roving weights and have wondered that serious consequences have not followed upon their employment in filling prescriptions calling for potent medicaments.

Druggists could learn something in this respect from their chemist friends. If they went into the weighing room of a chemical laboratory they would notice that the chemist takes the tenderest care of his weights. They are always preserved in a box made for them, the smaller, flat ones being kept in the same box under a special plate of glass. They are never touched with the fingers, a pair of forceps being used for that purpose and for no other; this, also, has its own compartment in the box. The greatest precautions are taken to prevent any kind of substance, liquid or solid, from dropping upon the pieces of metal. If the weights are dusty they are not rubbed or scoured with a piece of paper or cloth, but are carefully dusted with a camel's hair brush. They are never allowed to remain in the balance pans, but are replaced in their case every time the weighing is finished. The chemist knows that if he failed in this case the weights would become inaccurate and his results vitiated.

Why should not the pharmacist exercise the same vigilance to assure himself that his weights are always true?—*The National Druggist.*

FORTUNE KEEPS NO VISITING LIST.

Thousands of men had that in them which could have made them a Napoleon or a Cæsar, a Carnegie or a Field, but they remained nonentities simply because they had a fool idea that Fortune keeps a visiting list. She doesn't. She hasn't stirred from home since she first went into business. Her abode is way up among the crags. There are no tramways to her door. No man who ever found the path managed to leave footprints to guide another over exactly the same route. She gives nothing. She trades and she drives her bargains just as hard as a Monday shopper. The price of her goods must be paid for in grit and ability.—*Herbert Kaufman.*

Changes of Address

All changes of address of members should be sent to the General Secretary promptly.

The Association will not be responsible for non-delivery of the Annual Volume or Year Book, or of the JOURNAL unless notice of change of address is received before shipment or mailing.

Both the old and the new address should be given, thus:

HENRY MILTON,
From 2342 Albion Place, St. Louis, Mo.
To 278 Dartmouth St., Boston, Mass.

Titles or degrees to be used in publications or in the official records should be given, and names should be *plainly* written, or typewritten.

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GORDON, FREDERICK TROUP, U. S. Navy,
From 2113 W. Norris St., Philadelphia, Pa.,
To 2115 Medary Ave., Philadelphia, Pa.

GITHENS, THOS. S.,
From 602 Wrightman Bldg., 1524 Chestnut St., Philadelphia, Pa.,
To Rockefeller Institute, 66th and Avenue Ave., New York City.

MAISEL, JOSEPH,
From 133 Third Ave., Brooklyn, N. Y.,
To 866 Kelly St., New York, N. Y.

WILSON, CHAS. F.,
From 200 East 31st St., Chicago, Ill.,
To 255 East 30th St., Chicago, Ill.

MISCH, EDW. F.,
From Milford, Utah,
To Washington Ave. and 25th St., Ogden, Utah.

LEDERLE, A. L.,
From Detroit, Mich.,
To Leland, Mich.

SCHLICHTING, A. F.,
From Ann Arbor, Mich.,
To Agricultural College, N. Dak.

O'GORMAN, T. V.,
From Ellis Island, N. Y.,
To St. Joseph Home, 209 W. 15th St., New York City.

ROSE, MARTIN,
From Ft. Leavenworth, Kans.,
To Ft. Barry, Calif.

KROGER, HARRY A. R.,
From Ft. Casey, Wash.,
To Camp Downes, Manila, P. I.

BOYD, G. W. F.,
From 121 Second St., N. E., Washington, D. C.,
To Mass. Ave. and Second St., N. W., Washington, D. C.

PORTER, G. ELLIS,
From Los Angeles, Calif.,
To 1068 Line St., Riverside, Calif.

ROBINSON, DANIEL W.,
From Camp Treadwell, P. I.,
To Regan Barracks, Albay, P. I.

LOWE, CLEMENT B.,
From 6630 Germantown Ave., Philadelphia, Pa.,
To 150 E. Washington Lane, Philadelphia, Pa.

MONTGOMERY, MOSES, Sgt., H. C.,
From Ft. San Pedro, Iloilo, P. I.,
To Camp Bumpus, Leyte, P. I.

CULBRETH, DAVID M. R.,
From 1307 N. Calvert St., Baltimore, Md.,
To Spring Lake Beach, care Lucas Cottages, N. J.

LEVIN, DAVID,
From 5214 Ballard Ave., Seattle, Wash.,
To 4505 Frankford Ave., Philadelphia, Pa.

STEELE, JAS G.,
From 1424 Laguna St., San Francisco, Calif.,
To Pacific Grove, Calif.

NELDEN, RALPH,
From 145 P St., Salt Lake City, Utah,
To Parkdale, Oregon.

LEECH, H. D.,
From U. S. Marine Hospital, Stapleton, N. Y.,
To New Orleans Quarantine Station, Quarantine, La.

OWEN, FRED S., Sgt., 1st Cl. H. C., U. S. A.,
From Ft. Warren, Boston Harbor, Mass.,
To Ft. Niagara, Youngstown, N. Y.

ELISBURG, LOUIS A.,
From 5200 Washington Blvd., Chicago, Ill.,
To 5035 Washington Blvd., Chicago, Ill.

WARD, A. J.,
From 2915 14th Ave., Denver, Colo.,
To Arcade No. 1, Railway Exchange Bldg., Denver, Colo.

SAHM, LOUIS N.,
From 22 Cliff St., New York City,
To 505 Hudson St., care Heller & Merz, N. Y. City.

TO RESIDENCE UNKNOWN.

DORAN, GEO C.,
From Iloilo, P. I.

BJORK, NEILS J.,
From Cheyenne, Wyo.

THE FUTURE OF THE PHARMACIST.

The first issue of Successful Medicine, a bright, interesting journal devoted to the business side of medicine, and edited by H. R. Harrower of Chicago, contains an article the gist of which is that, "It pays to dispense." We do not need to recapitulate the arguments on this matter. In a narrow sense and under certain local conditions, it does pay to dispense, just as it pays to prescribe over the counter. In the broad sense of the ultimate welfare of all parties concerned it does not pay for any man to do that for which he is not specially trained and to take some other man's business from him.

With the present overcrowded conditions of both the medical and the pharmaceutic profession, and the growing scarcity of money in proportion to its purchasing power, it is inevitable that the keen competition for a living should result in violations of ethical principles among the members of each profession, and that the effects should be felt within and across professional lines. But we must maintain our ideals and make the economic conditions fit the ideals instead of lowering our ideals to fit an economic disturbance of supply and demand which can be corrected. This is especially true because, however much the individual may gain in a low financial sense from disregarding principles of ethics, no lowering of standards will produce any genuine improvement.

There are certain details, however, in which common sense—which is always good ethics—requires a readjustment of standards. First of all, we must face the fact that the modern materia medica contains a great many valuable remedies and a great many elegant and convenient preparations of old drugs, which cannot be manufactured in a retail drug store. The pharmacist must, therefore, act as the retailer of package goods. In the country and, to some extent in the city, economy, convenience and promptness of supply, compel the physician to dispense to a greater or less degree.

Secondly, the time-honored liquid mixture of principal drug, corrigent, adjuvant, and vehicle, has very largely given place to condensed medication in which tastelessness, directly or indirectly secured, has proved superior to older notions of palatability, and in which one drug is given at a time, for its own effect, in a dose that may be regulated from time to time without regard to that of adjuvants.

Thirdly, even within the memory of physicians still in active practice, drugs have gradually given place to mechanic, electric and other imponderable therapeutic agents and such drugs as are used, are being applied locally by the physician himself.

We do not mean to imply a disbelief in drugs. Many diseases are distinctly perversions of bodily chemistry; obviously they demand chemic correction. Moreover, while the ultimate explanation is not known, the fact remains that many drugs produce mechanic and chemic effects on various vital organs. We are inclined to believe that, while many drugs have been discarded and while we have learned that the use of others has been based on misconceptions or may properly yield to other measures, at no time have drugs properly prepared and used with discrimination, produced such satisfactory results as at present.—*Buffalo Medical Journal.*